BOSCH

WFL 2060UC & WFR 2460UC Washer Training Program



LED display model - WFL2060UC



Digital display model - WFR2460UC

1st Edition/Revision 5 (1/20/04)

WFL 2060 & WFR 2460 Training Program

- Features and Benefits
- Product Description
- Warranty
- Installation
- Operation
- Disassembly
- Reassembly
- Wiring Diagram
- Service Tips





Features and Benefits

- Larger door - 25% larger vs. WFK 2401
- Larger opening - 15% larger vs. WFK 2401 (easier loading and unloading)
- Larger drum - 19% larger vs. WFK 2401 (13 lb. capacity vs. 11 lb. for WFK 2401)
- Very energy efficient - Energy Star rated
- Stainless steel drum - won't rust & is gentle to clothes
- Uses little water
- 3-Tier water fill for fast & equal water fill
- 180° door opening
- Up to 5 rinses
- Suds sensing - rinses out suds leaving no soap film
- Unbalanced load sensor - adjusts spin to balance load
- UL listed (U.S. & Canada)





Extra Features and Benefits -- WFR 2460

- Continuous cycle notification - digital display
- *Sensotronic II Plus* electronic control
- Accurate water level control independent of water pressure
- Digital clock
- Real time cycle finish (displays actual time of day cycle stops)
- Real time delay (enter actual time of day for wash to end)
- Reduced ironing
- Interactive language display - choose desired language (English, French, Spanish, German)
- Continuous suds sensing
- Child lockout



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Product Description

- Electronic *Sensotronic* controls
- Larger capacity & door opening
- Detergent & softener dispenser
- *Regular/Cotton*, *Permanent Press*, *Delicates* & *Hand Washables* settings
- 180º door opening
- Stainless steel inner drum
- Durable *Polinox* outer drum
- *Power Wash*, *Rinse Plus* & *Quick Wash* buttons
- Adjustable spin speeds
- Guaranteed temperatures
- UL listed (U.S. & Canada)
- Drain hose & cord holders



Warranty (1)



Bosch Washers and Dryers Limited Lifetime Warranty

Statement of Limited Warranty

The warranties provided by BSH Home Appliances ("Bosch") in this Statement of Warranties apply only to Bosch clothes washers and dryers sold to the first using purchaser by Bosch or its authorized dealers, retailers or service centers in the United States or Canada. The Warranties provided herein are not transferable, and take place from date of installation.

1 Year Full Limited Warranty

Bosch will repair or replace, free of charge, any component part that proves defective under conditions of normal home use, labor and shipping costs included. Warranty repair service must be performed by an authorized Bosch Service Center.

2 Year Limited Warranty

Bosch will provide replacement parts, free of charge, for any component part that proves defective under conditions of normal home use, shipping costs included.

Warranty (2)

5 Year Limited Warranty On Electronics

Bosch will repair or replace, free of charge, any microprocessor or printed circuit board that proves defective under conditions of normal home use for a period of five years from the date of original installation, labor charges excluded.

5 Year Limited Warranty On Motor

Bosch will repair or replace, free of charge, any pump or component part of the pump that proves defective under conditions of normal home use for a period of five years from the date of original installation, labor charges excluded.

5 Year Limited Warranty On Cabinet Rust-Through

Bosch will replace any cabinet part, free of charge, if that cabinet part should rust through under conditions of normal home use, labor charges excluded.

Lifetime Limited Warranty Against Stainless Steel Rust-Through

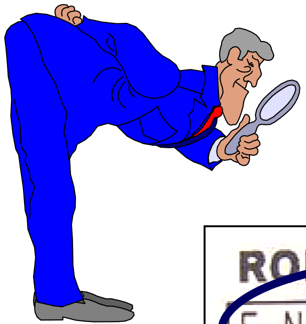
Bosch will replace your clothes washer or dryer, free of charge, with the same model or a current model that is equivalent or better in functionality if the drum should rust through under conditions of normal home use, labor charges excluded.



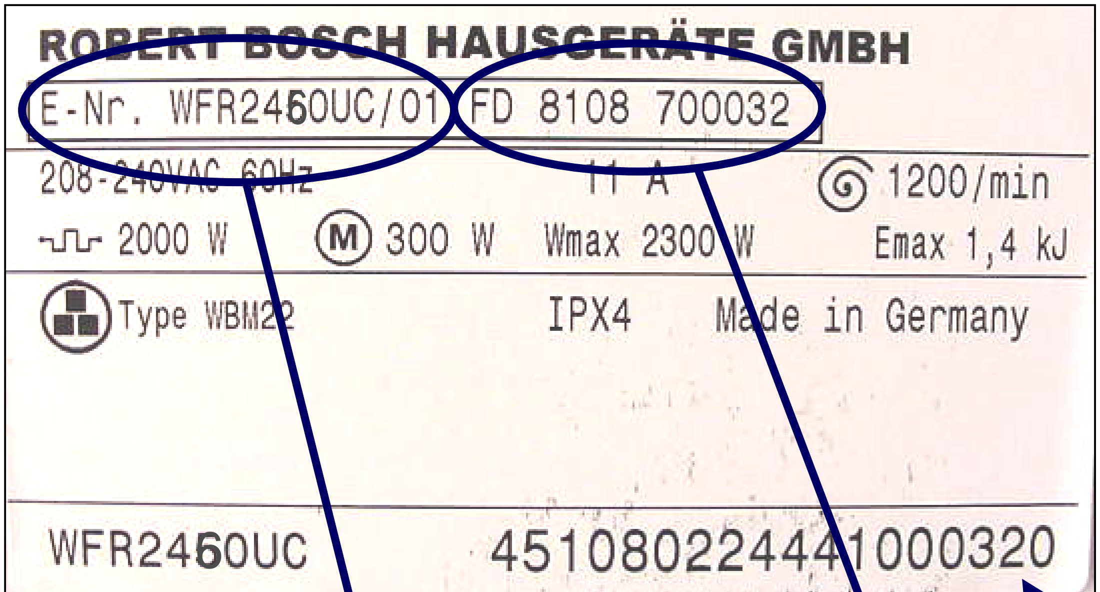
For location of nearest repair depot call 1-800-944-2904 from 5:00 AM - 5:00 PM M-F (Pacific time)

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Warranty -- Serial # Label



The serial # label, located on the rear of the washer, shows necessary warranty information.



Serial # label



- **Model #** - **"WFR2460UC/01".**

- **Serial #** - **"FD 8108".** To find when the product type was built, add 20 to the 1st two digits to get the year (81 + 20 = 101 → product type was built in 2001). The last two digits show the month (08 = August).

Factory serial # - Can convert factory serial # to FD # for warranty use. 1st 2 digits show factory # (45 = Berlin), 3rd digit shows year (1 = 2001), 4th & 5th digits show month built (08 = August). So, serial # starting with "45108…000320" = washer built @ Berlin with FD 8108 700032.

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Installation -- Reprint of Installation Instructions

Installation, Connection and Transport

Safety information

⚠ RISK OF INJURY! ⚠

The washing machine is heavy. Take care when lifting it.

CAUTION

Frozen hoses can tear / burst. Do not install the washing machine outdoors or in an area prone to frost.

Be sure to observe all listed warnings and cautions.

These installation instructions are intended for use by qualified installers. In addition to these instructions the washer shall be installed:

- In the United States, in accordance with the National Electric Code, ANSI/NFPA70 – latest edition/State and Municipal codes and/or local codes.
- In Canada, in accordance with the Canadian Electric Code C22.1 – latest edition/State and Municipal codes and/or local codes.

If the washing machine is located in a room which will be exposed to freezing temperatures, or if it is located in a cabin that is being shut down for the winter, any residual water in the pump or water inlet hose(s) must be drained.

To drain the pump refer to page 20.

To drain the water hose(s) refer to page 22.

Take care not to damage the washing machine. Do not hold onto protruding parts (e.g. loading door) when lifting.

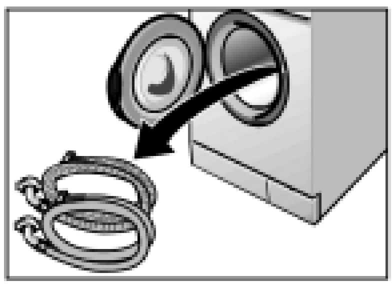
In addition to the safety information listed here, the local water and electricity supplier may have special requirements.

If in any doubt, have the appliance connected by an authorized technician.

Factory-supplied equipment

There is a packet of accessory parts supplied with your washer. Check to make sure that the accessory parts supplied for your model are all there. If any parts are missing, contact your dealer immediately.

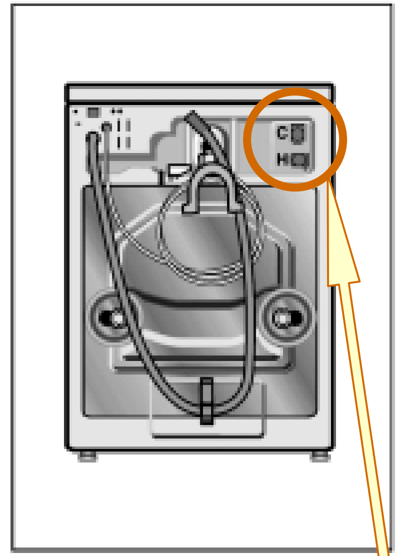
Inside the drum:



- Water supply hoses (cold and hot water).

Any dampness inside the drum is left over from final testing which every washing machine is subjected to before leaving the factory.

On the rear of the appliance:

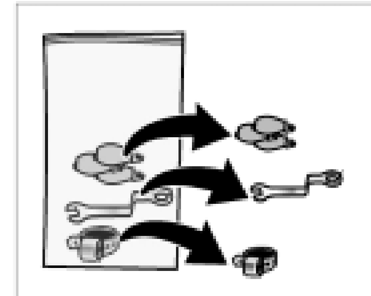


- Water drain hose.
- Mains cable with plug.
- Elbow for attaching the drain hose, e.g. into a wash basin.

C = cold water connection

H = hot water connection

The bag contains:



- Covers for placing over the openings after the transport bolts have been removed.
- Wrench
- 1 hose band clip for connection to a siphon.

Depending on the type of connection, the following may also be required:

- Y-piece (can be obtained from any specialist store) in the event that cold water connection only is possible.

Useful tools

The following tools are helpful:

- Box cutter. ("utility knife")
- Flat (blade) screwdriver.
- Ring wrench.
- Spirit level.

NOTE: Be sure to follow all national & local codes.

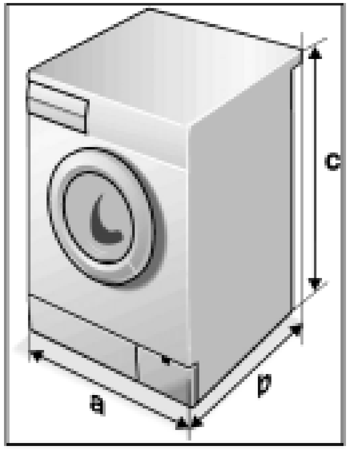
HINT: "Mains" is the European term for "power", so "mains cable" = "power cord".

HINT: Cold & hot water connections are clearly marked on the rear of the washers.

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Installation -- Reprint of Installation Instructions

Dimensions



a = 600 mm // 23 5/8"
b = 590 mm // 22 1/2"
c = 852 mm // 33 1/2"
Approx. weight = 69 kg // 152 lbs.

Installation area

WARNING

Never ground the washer to plastic plumbing lines, gas lines or hot water pipes.

Appliance stability is important so that the washing machine does not "walk" during the spin cycles.

The installation area must be solid and even. Soft floor surfaces, such as carpets or surfaces with foam backing, are not suitable.

If the washing machine is to be installed on a wood joist floor:

- If possible, place the washing machine in a corner of the room.
- Screw a water-resistant wooden board (at least 30 mm thick) to the floor.
- Affix the feet of the washing machine using holding brackets *.

If the washing machine is to be placed on a pedestal:

- Affix the feet of the washing machine using holding brackets *.

  * Holding brackets (set) can be obtained from the Customer Service (order no. WMZ 2200).

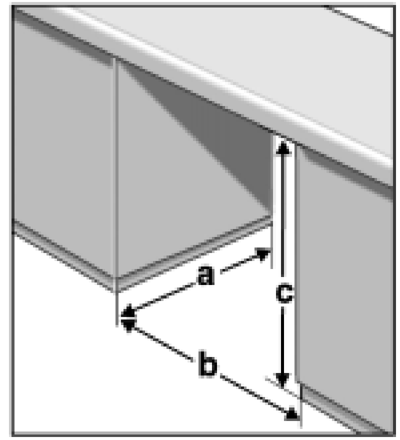
WARNING

To reduce the risk of fire this washer must be fastened or otherwise secured to an uncovered concrete floor.

Pedestal Mounting
For mounting the washer on the Bosch 12" pedestal (accessory No. WTZ 1210) follow the instructions supplied with the pedestal.

Built-in Installation

The appliance can be built-in; that is, you can install the washing machine under-counter in a kitchen cabinet opening.



a 590 mm minimum // 23 1/4"
b 600 mm minimum // 23 5/8"
c 850 mm minimum // 33 1/2"

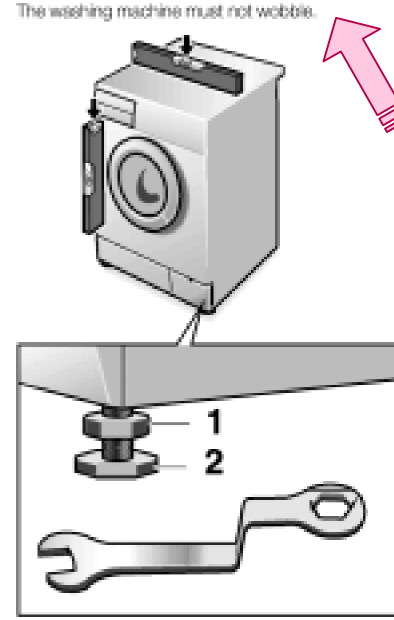
Minimum Installation Clearances

	Alcove/Under Counter	Closet
Sides	0" (0 mm)	0" (0 mm)
Top	0" (0 mm)	0" (0 mm)
Rear	0" (0 mm)	0" (0 mm)
Front	0" (0 mm)	0" (0 mm)

Note: Closet with dryer, please check the openings and ventilation requirement's for the used dryer.

Levelling procedure

All four appliance feet must be firmly on the ground. The washing machine must not wobble.



Level the washing machine with the assistance of the four adjustable feet and a spirit level:

- Loosen the counter-nut **1** using the wrench.
- Adjust the height by means of turning the appliance feet **2**.
- Tighten lock nut **1** against the housing.

HINT: To avoid damaging washer, don't move it while the feet (leveling legs) are extended.

Installation -- Reprint of Installation Instructions

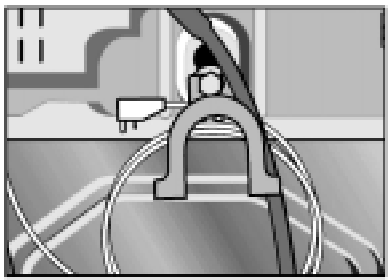
Removing the transport bolts

CAUTION

The transport bolts must always be removed before using the appliance for the first time and must be retained for any subsequent transport (e.g. when moving).

Preparing

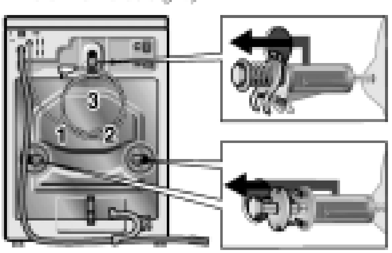
Before removing the transport bolts:



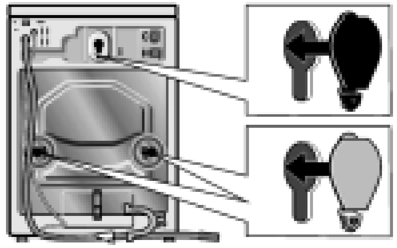
- Take the hoses out of the holders.
- Detach the elbow.

Removing

- Release screws **1**, **2** and **3** using the wrench until they can be moved freely.
- Completely remove transport bolts **1** and **2** (bolts, washers and bushes).
- Completely remove transport bolt **3** (bolt, spring, washer and bush) by reaching through the open washing machine door and pulling the drum forwards slightly.

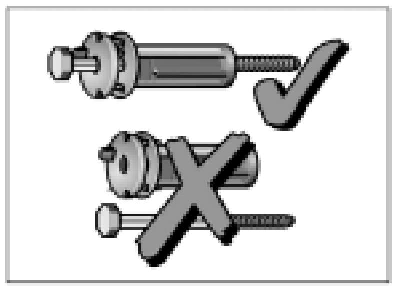


- Insert the covers.



Storing the transport bolts

Always keep the transport bolts for subsequent transportation of the appliance (e.g. when moving house).

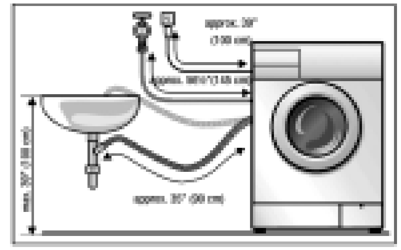


- Store the transport bolts **1** and **2** with washer and bush attached.

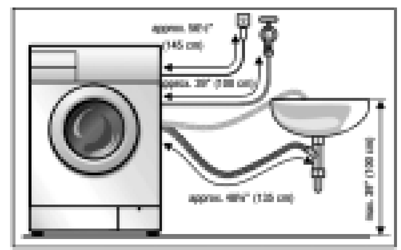
HINT: Loosen transport (shipping) bolts just enough to remove them from the washer -- don't unscrew them completely so the bushings fall from the bolts into the washer frame.

Hose and cable lengths

Left-hand connection



Right-hand connection



Other hoses

Available from specialty dealers:

- Extended supply hose (approx. 2.2 m // 86.6 in).

Water connection

Water supply

CAUTION

The washing machine must only be operated with cold and hot (max. 140 °F // 60 °C) tap water. Do not connect the appliance to the mixer tap of an unpressurized hot-water boiler.

If in any doubt, have the water connection carried out by an authorized technician.

The water supply hoses must not be:

- Bent or squashed.
- Modified or cut through (stability can no longer be guaranteed).

Plastic threads must only be tightened by hand. Do not remove the strainers from the water supply hoses.

Observe the water pressure in the supply network:

- The water pressure should be between 14.5 to 145 p.s.i. (1 to 10 bars) (when the tap is turned on, at least 2.2 U. S. gallons (8 liters) of water is discharged per minute).
- A pressure reducing valve must be installed if the maximum water pressure is exceeded.

CAUTION

To protect against water damage, the hot and cold water valves should be accessible when the washer is in place and should **always** be turned off when the washer is not in use.

When washer is being installed in new construction, or a building that has had its plumbing system recently installed or upgraded, the lines must be flushed prior to installing the washer. This must be done to clear the lines of any sand, dirt or residue that may still be in the lines.

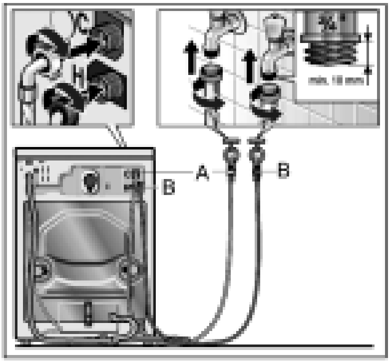
HINT: To eliminate possibility of leaking, don't overtighten fittings. Teflon tape can also be used on all threads.

HINT: Be sure to remove the transport (shipping) bolts & keep them near the washer (for future shipment).

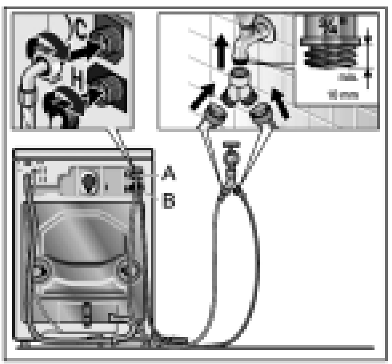
Installation -- Reprint of Installation Instructions

Connection options

A Cold water connection and
B Hot water connection (max. 140 °F // 60 °C)



or Cold water connection only with Y-piece



❑ Subsequent to connection:
Turn on the water taps completely, and check connection points for water-tightness.

CAUTION

The connection points are under full water pressure. Check seal with tap fully open.

Water drainage

CAUTION

Do not bend or pull the water drainage hose.

Height difference between the placement area of washer and the drainage point:
Maximum 110 cm // 43 inches.

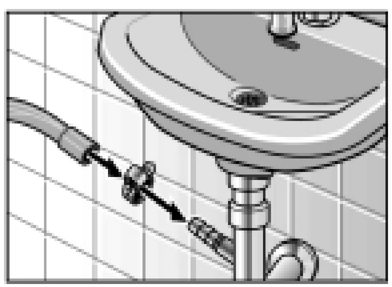
Standpipe or in Wall Installation



❑ Use the U-bracket. Attach the U-bracket to the end of the hose and insert end of hose into standpipe or wall drain.

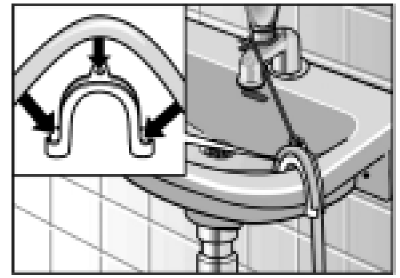
❑ Use a strap or cable tie connected to U-bracket to hold hose in place.

Drainage into a siphon



❑ Secure the connection point with a hose band clip.

Drainage into a wash basin



CAUTION

The plug must not block the drain of the wash basin.

❑ Secure the water drainage hose so that it does not slide out.

❑ When water is being drained, check that the water flow is fast enough.

HINT: The washer uses a **NEMA 6-15P** 240V, 15A, 3-wire plug, which mates to a NEMA 6-15R outlet (receptacle).



Electrical connection

GROUNDING INSTRUCTIONS

This appliance must be grounded. In the event of malfunction or breakdown, grounding will reduce the risk of electrical shock by providing a path of least resistance for the electric current. This appliance is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

WARNING

Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or serviceman if you are in doubt as to whether the washing machine is properly grounded.

Do not modify the plug provided with the appliance – if it will not fit in the outlet, have a proper outlet installed by a qualified electrician.

WARNING

The washing machine must only be connected to an individual branch circuit and using a properly installed socket outlet which is grounded.

The mains voltage must correspond to the voltage specification on the washing machine (nameplate). Connection specifications as well as the required fuses are stipulated on the appliance nameplate.

Volts	Hertz	Amperes	Watts
208/240	60	11	2500 (max.)

Make sure that:

- the mains plug fits the socket outlet.
- the cable cross-section is permissible.
- the grounding system is properly installed.

The mains cable may be replaced by an electrician only.
Replacement mains cables are available from Customer Service.

HINT: Bosch dryers include a NEMA 6-15R outlet which the washer **NEMA 6-15P** 240V, 15A, 3-wire plug can be plugged into.

HINT: "Mains" is the European term for "power", so "mains cable" = "power cord".

Installation -- Reprint of Installation Instructions

WARNING

To reduce the risk of fire or electrical shock, DO NOT use an extention cord or an adapter to connect the washer to the electrical power supply.

In the event that an earth-leakage circuit breaker is to be used, only use types marked with the following symbol: ⊡.
Only this symbol can guarantee compliance with all current regulations.

Do not insert / remove the mains plug with wet or damp hands.

Handle the plug body only when removing the plug from the socket.



HINT: Bosch dryers include a NEMA 6-15R outlet which the washer **NEMA 6-15P** 240V, 15A, 3-wire plug can be plugged into.

Transport, e.g. when moving

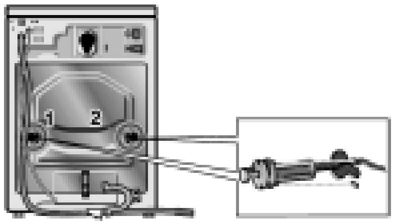
Before transporting the washing machine:

- Turn off the water tap.
- Drain any residual water (refer to page 20).
- Release the water pressure in the supply hose (refer to page 22).
- Disconnect the washing machine from the mains.
- Dismantle the supply and drainage hose.
- Install the lower 2 transport bolts.

Having transported the appliance and ensured proper installation and connection, allow the **Drain** program to run through before starting the first wash program.

Preparing and inserting the transport bolts

- ❑ Remove the 2 lower covers.
- ❑ Prepare the transport bolts:
  Loosen the screw in the sleeve until the end of the screw is level with the end of the sleeve.
- ❑ Insert and tighten transport bolts **1** and **2**. The lug on the washing machine must be located in the groove in the rear panel of the housing.

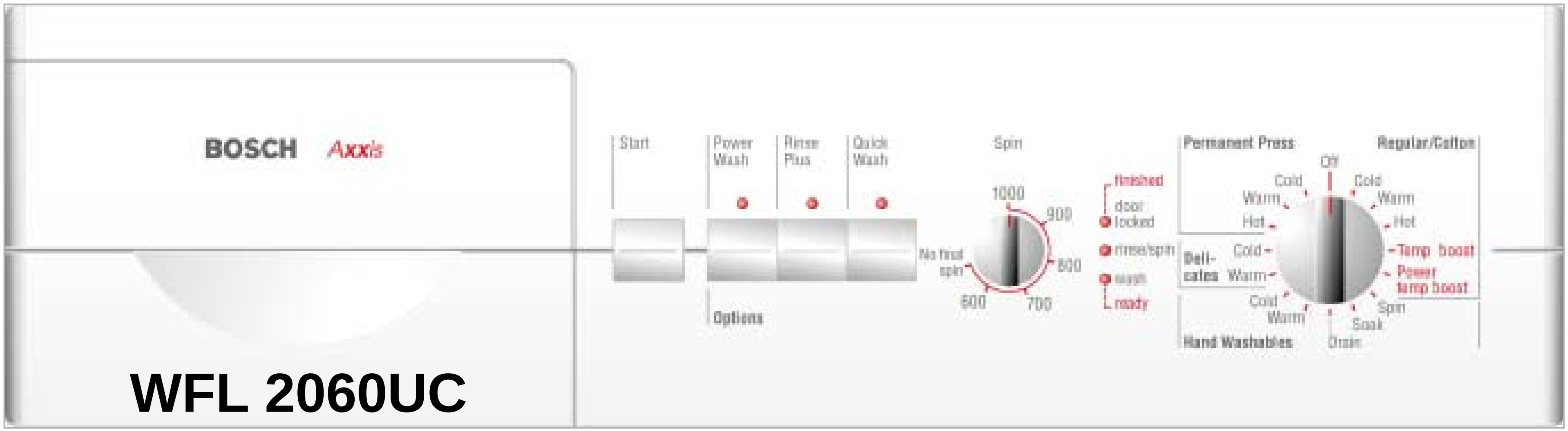


Be sure to remove the transport (shipping) bolts!

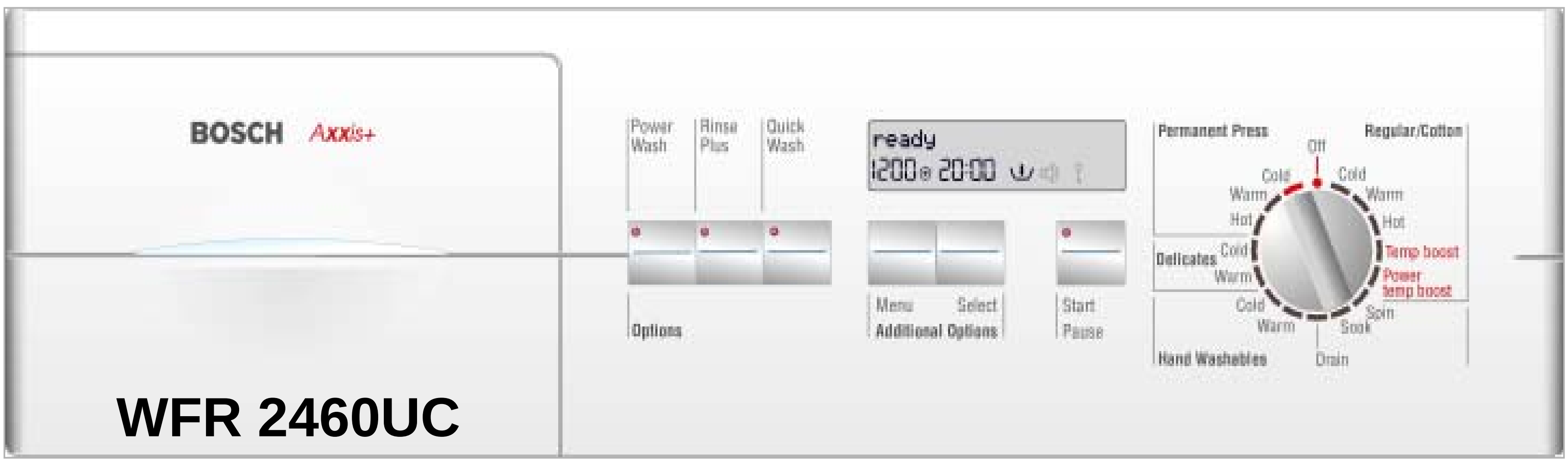
HINT: When moving an existing washer, screw in the feet (leveling legs) first so they won't be damaged.

HINT: "Earth" is the European term for "ground", so "earth leakage" = "ground fault" (GFCI or GFI receptacle).

Operation -- Fascia Panels



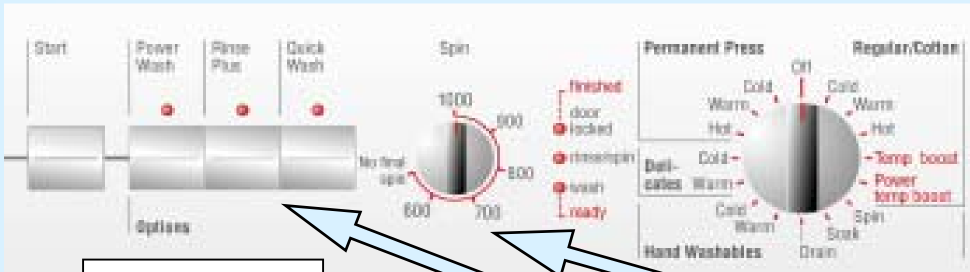
WFL 2060UC



WFR 2460UC

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Operation -- Controls



WFL 2060UC

Both have *Regular/Cotton*, *Permanent Press*, *Delicates*, *Hand Washables*, *Temperature Boost* & *Power Temperature Boost* settings.

Spin Speed Selector knob

Special Wash Buttons

Digital Display



WFR 2460UC

Operation -- Sensors (1)

1A. <u>Load Sensor</u> (WFL2060UC)

At a predefined points during the initial fill, the washer determines if it needs more water using a pressure switch. This is due to differences in the absorption of the laundry and the size of the loads.

1B. <u>Dynamic Load Sensor</u> (WFR2460UC)

During the entire fill the washer continually adjusts for the size of the load and determines if more water is needed using an analog pressure switch and a flow meter.

2. <u>Digital Temperature Sensor</u> (WFL2060UC & WFR2460UC)

The thermostat monitors the temperature of the water and controls the length of time the heating element is on, ensuring the proper temperature for the chosen cycle.

3A. <u>Suds Sensor</u> (WFL2060UC)

During the beginning of the1st rinse/spin phase, the washer determines if there are excessive suds and automatically adds 2 rinses (if necessary). This is accomplished via the pressure switch and the motor synchronization system.

3B. <u>Continuous Suds Sensor</u> (WFR2460UC)

Checking the pumping out phase of the main wash, the beginning of the 1st rinse/spin phase and the actual spin speed vs. the programmed spin speed, the washer determines if there are excessive suds and automatically adds up to 2 rinses (if necessary). This is accomplished via the pressure switch, analog pressure switch and the motor synchronization system.

4. <u>Unbalanced Load Sensor</u> (WFL2060UC & WFR2460UC)

During the final spin cycle the washer monitors the positioning and balance of the load. If the load unbalanced, the washer stops and adjusts the load up to 15 times and reduces the spin speed to finish the cycle. This is accomplished via the motor synchronization system.

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Operation -- Sensors (2)

1A/1B. Load & Dynamic Load Sensors

Mechanical Pressure Switch **- (WFL 2060UC & WFR 2460 UC)** measures the water level after the first fill. If the water level is high (like for smaller loads), the pressure increases and the pressure switch does not provide more water.

Analog Pressure Switch - **(WFR 2460UC)**

- Precise measuring of actual water level
- Accurate load detection
- Control of the pump - noise reduction
- Time reduction - no pumping when empty

Mechanical Pressure Switch ***Analog Pressure Switch***



BENEFITS: Continuous adjustment of wash times

Water and energy consumed varies according to load size

Operation -- Sensors (3)

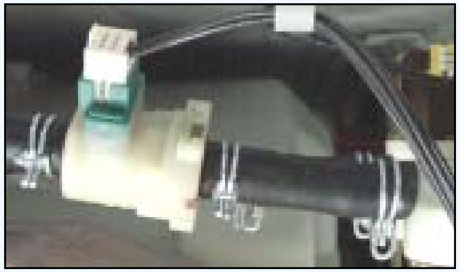
1A/1B. Flow Meter

- Exact monitoring of water inflow.
- Ensures exact control of water inlet valves so that there is always the right amount of water for wash and rinse cycles.
- Together with the pressure switch, there is a continuous adjustment of wash time, water and energy in relation to the load size.
- The flow meter works independently of water pressure.

BENEFITS: Minimizes water consumption

Exact Load Detection

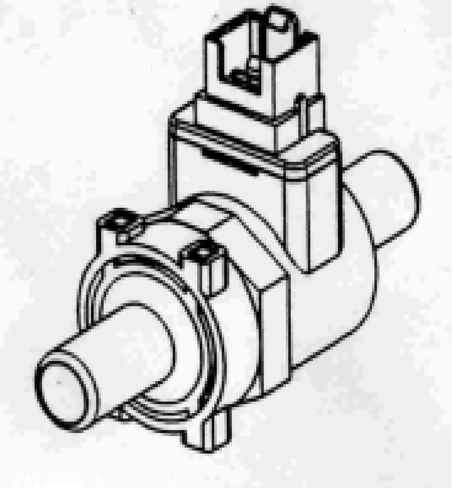
Superior Cleaning Performance

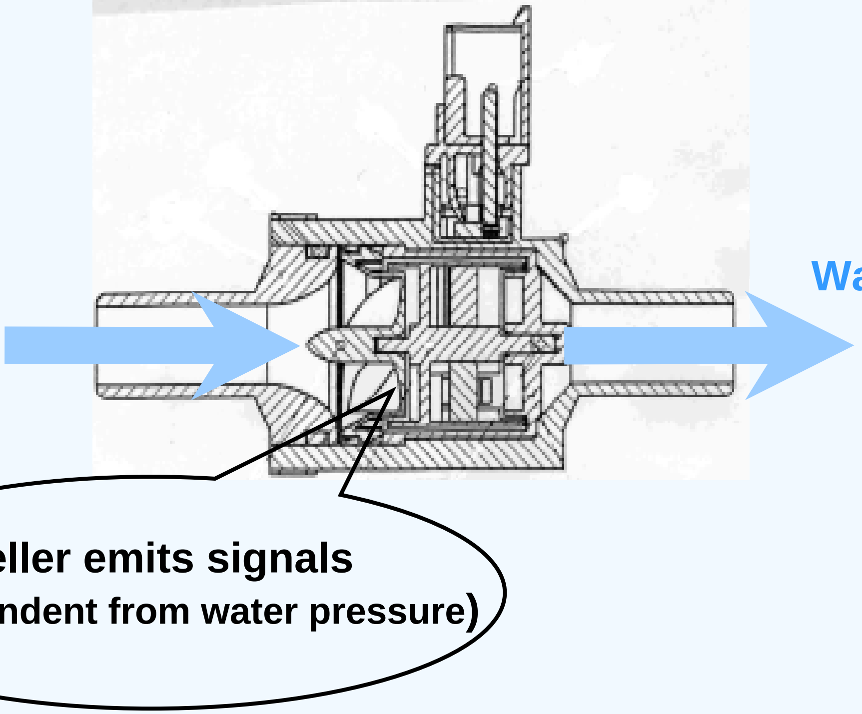


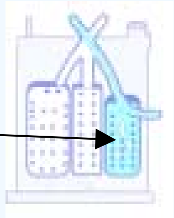
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Operation -- Sensors (4)

1A/1B. Flow Meter







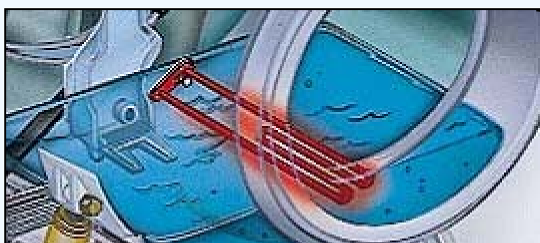
- ✓ An **internal water clock** monitors water inflow via soak compartment.
- ✓ Ensures exact control of water inlet valves - always right amount of water.
- ✓ Independent from water pressure.

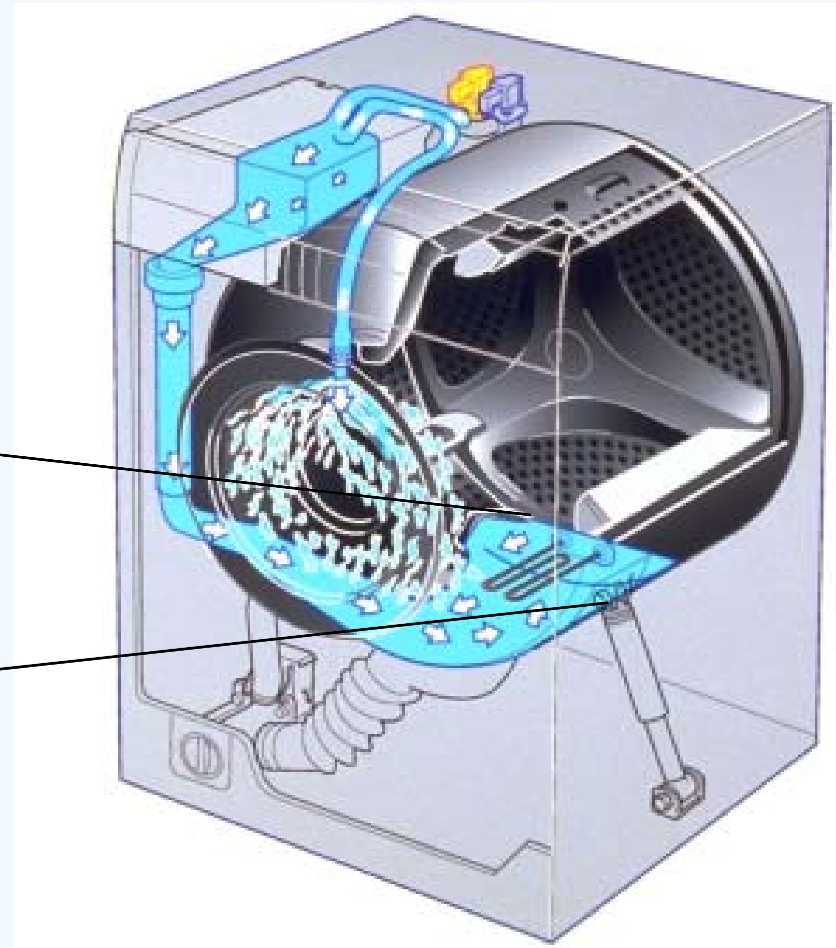
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Operation -- Sensors (5)

2. Digital Temperature Sensor

Both models are equipped with the Temperature Sensor to deliver guaranteed wash temperatures





Thermostat & Heating Element

BOSCH

Operation -- Sensors (6)

3A/3B. Suds & Continuous Suds Sensors

WFR2460

✓ Detection **during draining out after main wash**
➔ immediate additional rinse & cancelling of 1st rinse spin

WFR2460

WFL2060

✓ Detection **during 1st rinse spin**
➔ immediate interuption of spin
➔ insertion of **one** or **two** additional rinses
➔ reduced agition during additional anti foam rinse

WFR2460

✓ Detection **during any other rinse spin**
➔ immediate interuption of spin
➔ reduced agitiation in following rinse cycle

✓ **All subsequent rinse spin cycles are always rechecked for suds**

NOTE: Suds build-up usually occur only when way too much detergent is used with lightly soiled loads.

BOSCH

Operation -- Sensors (7)

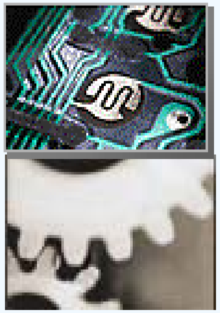
4. Unbalanced Load Sensor

New 2-step detection

- ✓ Accurate measuring of unbalance by **deviation of spin speed and slow down time of drum**
- ✓ **Infinite adapting** of spin speeds
- ✓ Compensates reducing of spin speeds by **prolonging spinning times**
- ✓ Will attempt up to 15 times to redistribute a load

Advantages:

- ✓ **Reduction of noise**
- ✓ **Better stability of machine**
- ✓ **Good spinning results with big unbalances**



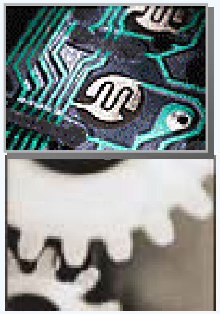
BOSCH

Operation -- Sensors (8)

4. Unbalanced Load Sensor

New 2-step detection





load distribution	unbalance	Spin speed (rpm)	spinning profile
good	small	1200 (max.)	I
uneven	medium	1000 (reduced)	II
bad	big	800 (low)	III
none	dangerous	no spinning	IV

After 4 attempts

After 7 attempts

After 14 attempts

Operation -- Cleaning Drain Pump Trap

Larger objects such as coins and paper clips are collected in the drain pump trap so they won't plug up or damage other parts of the washer. The drain pump trap can easily be cleaned by customers.



Cleaning the drain pump

This is necessary if the water cannot be drained completely. The pump is either blocked by loose debris or lint which accumulates if lint-giving fabrics are washed.

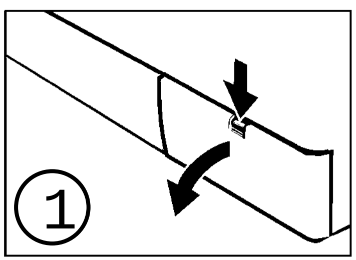
Draining the water

Up to 20 litres/4.4 gal. Have a suitable container ready.

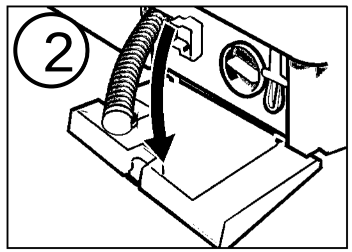
⚠ RISK OF SCALDING! ⚠

Allow the hot water to cool.
Keep children and pets away from the washing machine.

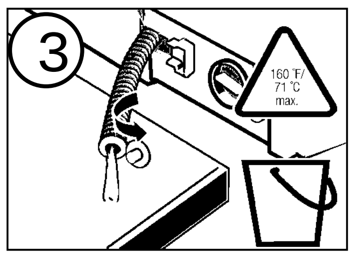
- ❑ Turn the program selector to **Off**.



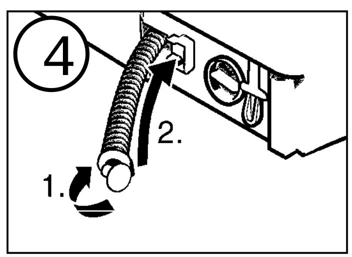
- ❑ Fold down the cover panel.



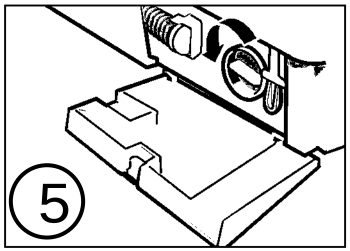
- ❑ Remove the drain hose from its holder and pull it out of the housing.



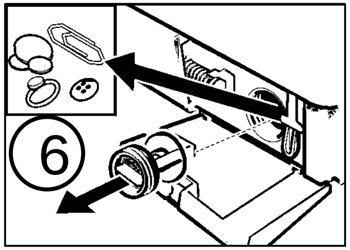
- ❑ Pull the cap off and allow the water to flow into a suitable container.



- ❑ First close the cap again and place the drain hose back in its holder afterwards.

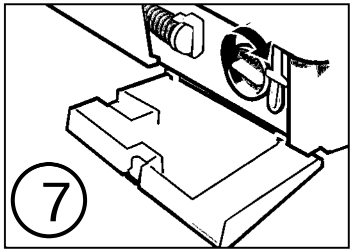


- ❑ Carefully remove the pump cap.



- ❑ Remove any loose debris/lint from inside the pump and clean the pump. The pump impeller must be able to rotate.
  Clean any remaining water or lint from the threads of the pump cap and pump housing.

- ❑ Attach and tighten the pump cap.



- ❑ Attach and close the cover plate.

To prevent unused detergent from flowing into the drain during the next wash cycle:

- ❑ Pour 1 litre/1 ¾ pt of water into chamber **II**.
- ❑ Select the **Drain** program.



BOSCH

Operation -- WFR 2460UC Sales Demo Mode

CAUTION: ***To avoid danger of electrical shock, make sure the washer is unplugged before changing any electrical connections!***

IMPORTANT: ***When reselling <u>any</u> WFL2060 or WFR2460 washers from display floors, replace the white (or gray) drain pump connector so washers will run properly and replace the shipping bolts so washers won't be damaged during shipment.***

SALES DEMO MODE PROCEDURE: **Preparing WFR2460 washers for display involves removing three shipping bolts and disconnecting the drain pump. To set up WFR2460 washers for display:**

Conversion: ***Make sure the washer is <u>unplugged</u> and is <u>not</u> connected to any water lines.***

1. ***Remove the three shipping bolts from the washer back panel, removing the top bolt last. Each bolt has an insert wedging up to the inside of the back panel. When removing bolts, loosen them, then move them (up, left or right) until they slide out the large circular holes (matching the insert sizes). Don't unscrew shipping bolts completely so inserts won't drop into the washer base. After removing bolts, cover the holes with white caps included with the washer.***
2. ***To access the white (or gray) drain pump connector from the back of the washer, remove the back panel by removing (7) T-20 & (4) T-30 Torx screws. Pull the white (or gray) drain pump connector to remove it, then secure the loose connector away from the frame or any washer parts with electrical tape (to avoid possibility of electrical shock).***
3. ***Replace the back panel, then attach the fuscia label to the rear of the washer so its visible.***

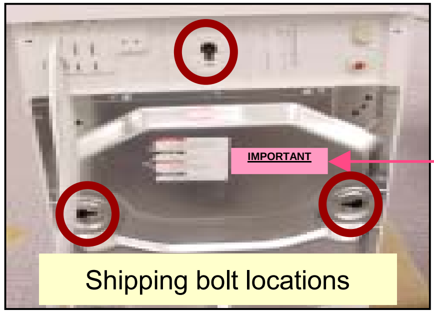
Power hook-up: ***Plug the washer into a 120V/240V transformer, then plug the transformer into a 120V, 15A power outlet.***

Using demo mode: ***Rotate the cycle selector knob to the "Spin" position and then push the "Start" button to perform a complete spin cycle. To interrupt the spin cycle, push the "Start/Pause" button.***

HINT: ***Before starting, make sure you have the following:***

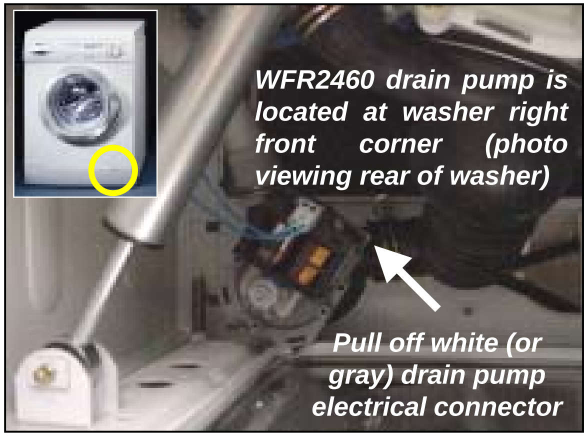
- ✓ B ***120V/240V transformer***
- ✓ ***Fuscia demo mode label ("IMPORTANT")***
- ✓ ***Access to 120V, 15A, 60Hz electrical outlet***
- ✓ ***T-20 & T-30 Torx screwdrivers***
- ✓ ***Electrical tape***

NOTE: ***Do not connect WFL2060 washers for sales demonstration -- all lights will turn on and washers won't run.***



Shipping bolt locations

Suggested placement for ***fuscia*** label ("IMPORTANT")



Disassembly -- Top & Rear Panels (1)

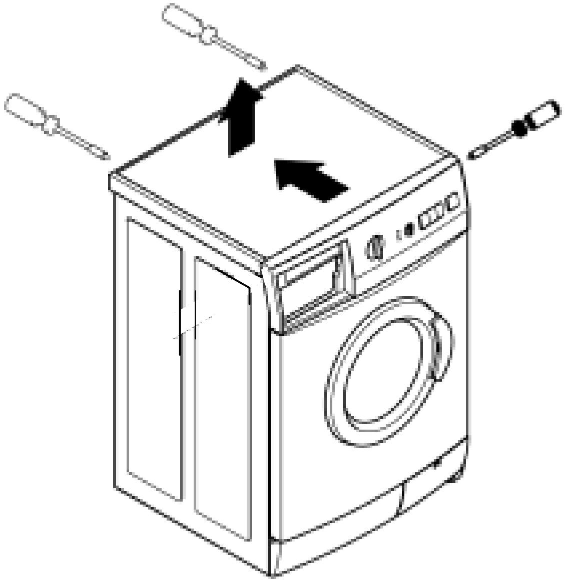


<u>NOTE</u>: Washers have 2 concrete counterweights (top & front) to dampen vibrations.



<u>NOTE</u>: When removing top panel, don't damage white plastic top panel latches.

<u>To remove top panel</u> to access control module, dispenser, inlet valves, pressure switch(es), drain reservoir, surge protector & wiring, remove (2) rear screws, then <u>carefully</u> slide panel toward rear of washer (until panel stops) and lift panel up.



Disassembly -- Top & Rear Panels (2)

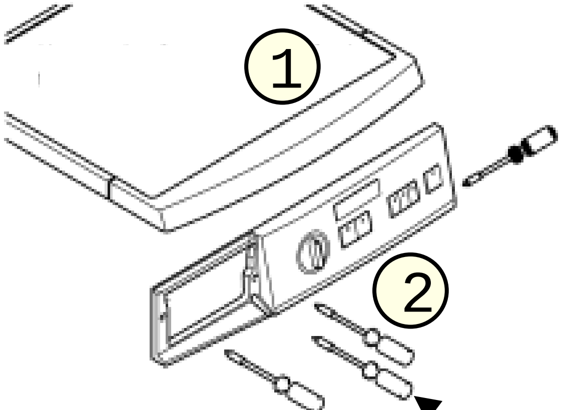




To remove rear panel to access drive motor and rear of drum, remove (7) T-20 & (4) T-30 Torx screws and gently lift panel up (off of tabs at top of panel).

Disassembly -- Drum (1), Top Panel

To access the drum, the front panel must be removed first.



TO REMOVE FRONT PANEL (to access drum):

- ① Remove top panel.
- ② To remove fascia panel, first remove T-10 Torx screw on right endcap and T-20 Torx screws on either side of fascia panel. Remove dispenser drawer (after pushing blue tab) and then remove (3) screws located behind dispenser drawer. Gently pull the bottom of the fascia panel away from the washer.
- ③ Remove base panel ("toe kick") by opening & removing drain trap door, unscrewing one T-20 Torx screw and gently pulling the bottom of the base panel away from the washer.

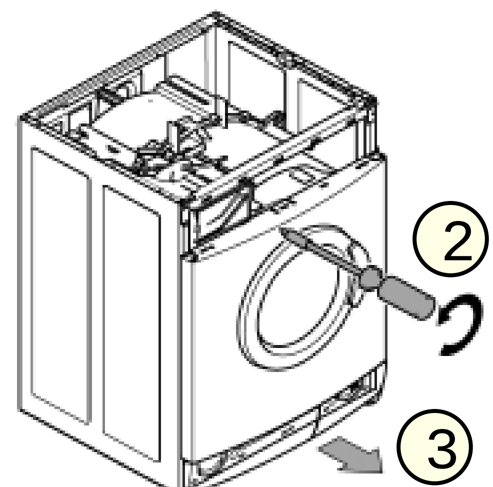




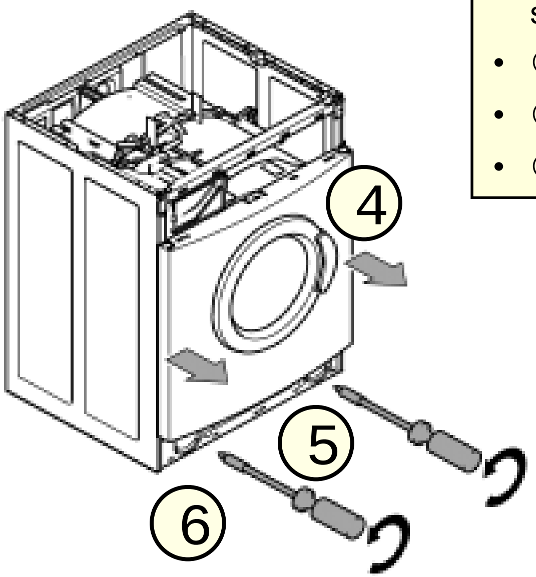


HINT: Dispenser screws are recessed -- use a screwdriver, not a socket set.

HINT: When accessing door seal, door seal spring or door latch, it's not necessary to remove the fascia panel. Remove only the bottom right corner dispenser screw.



Disassembly -- Drum (2), Front Panel



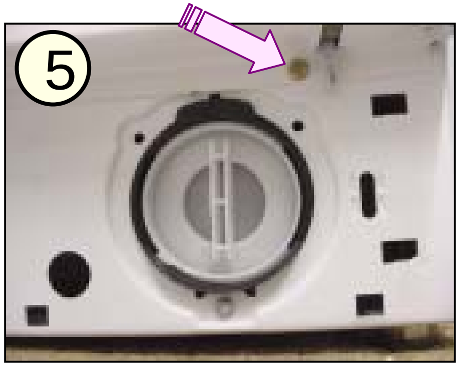
TO REMOVE FRONT PANEL (continued):

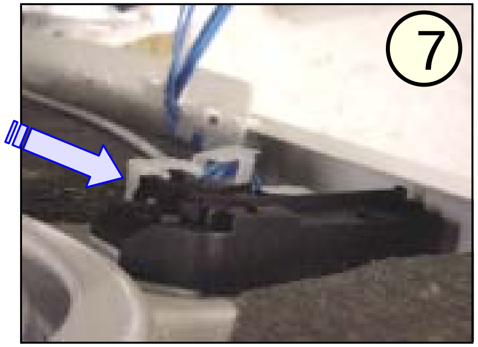
- ④ Carefully loosen door seal clamping rings (outer/inner), taking care not to tear seal. Loosen clamp and disconnect water fill tube from seal, then remove seal.
- ⑤ Remove two T-20 Torx front panel screws from bottom of front panel.
- ⑥ To remove front panel, carefully pull bottom of panel out away from washer.
- ⑦ Disconnect door latch connector.





HINT: When removing door seal, loosen clamp to water fill tube and disconnect tube from door seal.





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Disassembly -- Drum (3), Outer Drum (Tub) & Dampers

Outer tub

The tub consists of two glass fibre reinforced plastic shells. These shells are screwed and locked to each other.

Removing the outer tub:

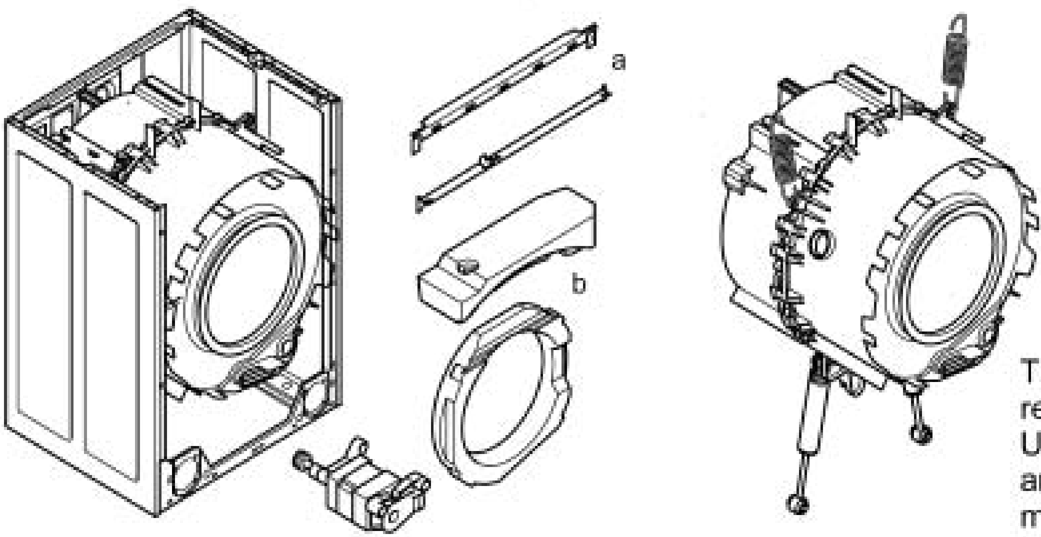
Remove the front panel, fascia and worktop.

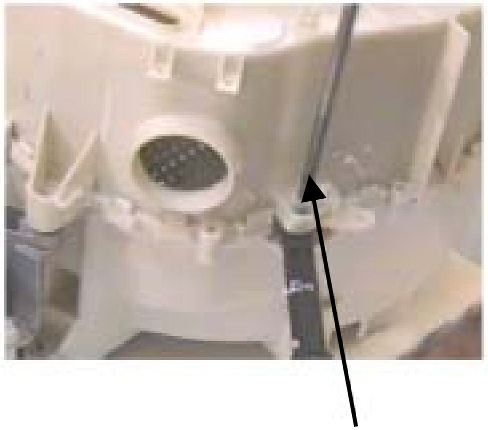
Remove the two crossbars (a) and remove the detergent dispenser.

Disconnect all electrical and mechanical connections on the outer tub.

To reduce the weight, dismantle the motor, jacket weight and front weight (b).

HINT: "Jacket" weight is the concrete counterweight on the top of the outer drum.





13.2 x 300 mm drill bit # 340700

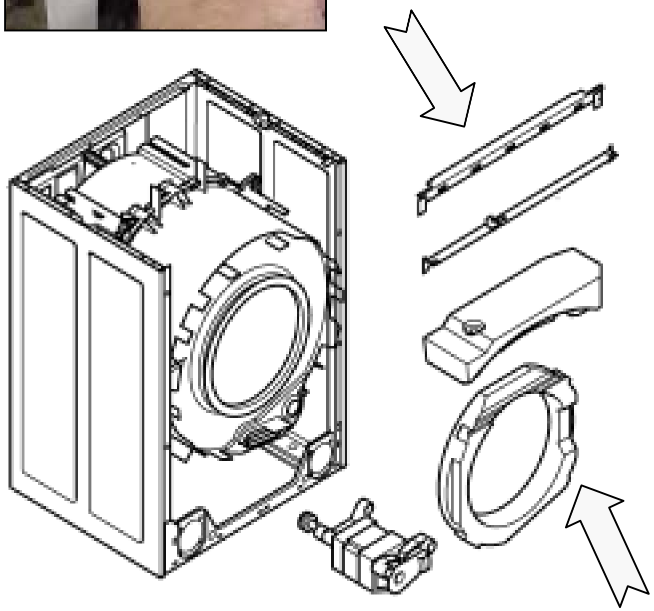
The dampers can be replaced without removing the outer tub.
Use a **13.2 mm bit – mat. no.: 34 0700 –** and damper kit. The plug-in shaft head must be drilled. The plug-in shaft can then be pressed out towards the rear.

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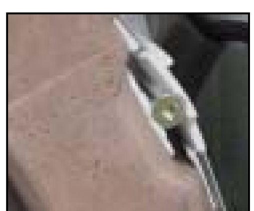
Disassembly -- Drum (4), Outer Drum (Tub)



HINT: After removing crossbar screws, remove crossbars by rotating bottom of them out from washer.



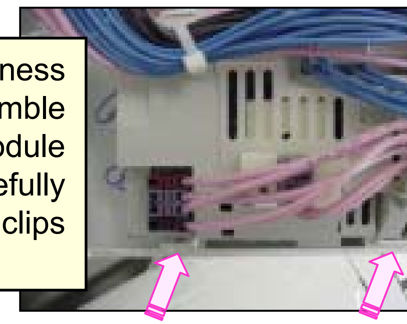
HINT: Unscrew band screws and remove band from front counterweight.

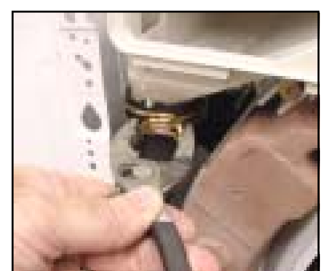


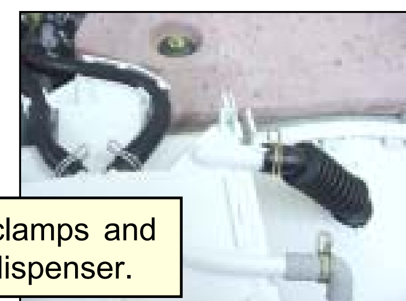
HINT: Before disconnecting wire harnesses from control module, mark each one to insure proper reassembly (as several connectors look identical).



HINT: To access wire harness connectors to disassemble them, separate control module from fascia panel by carefully prying back plastic clips around the module.







HINT: Loosen spring clamps and disconnect hoses from dispenser.

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Disassembly -- Drum (5), Outer Drum (Tub)

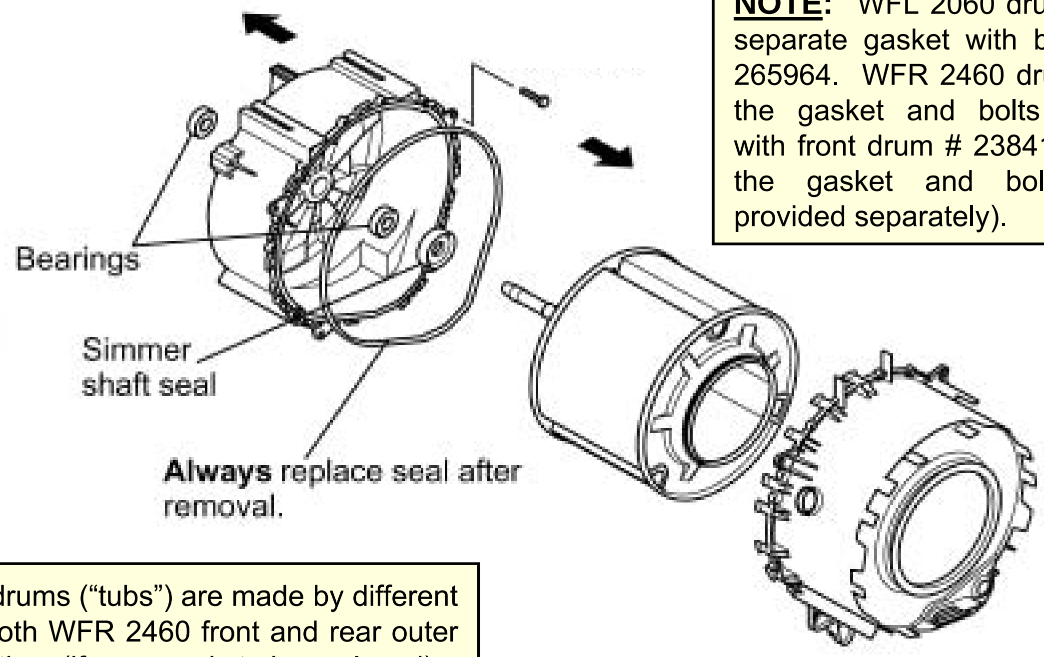
Removing the outer tub:

Remove all plastic clips with special side cutters, mat. no. 340701. The side cutters are specially shaped and are very sharp.

HINT: When installing outer drum bolts, screw them in by hand onto the first thread. Do not overtighten or cross-thread them.

NOTE: WFL 2060 drums use a separate gasket with bolts kit # 265964. WFR 2460 drums have the gasket and bolts included with front drum # 238410 (where the gasket and bolts aren't provided separately).





HINT: WFL 2060 & WFR 2460 outer drums ("tubs") are made by different vendors and can't be interchanged. Both WFR 2460 front and rear outer drums should be replaced at the same time (if one needs to be replaced).

Bearing assembly

The bearing assembly cannot be removed until the outer tub has been removed.

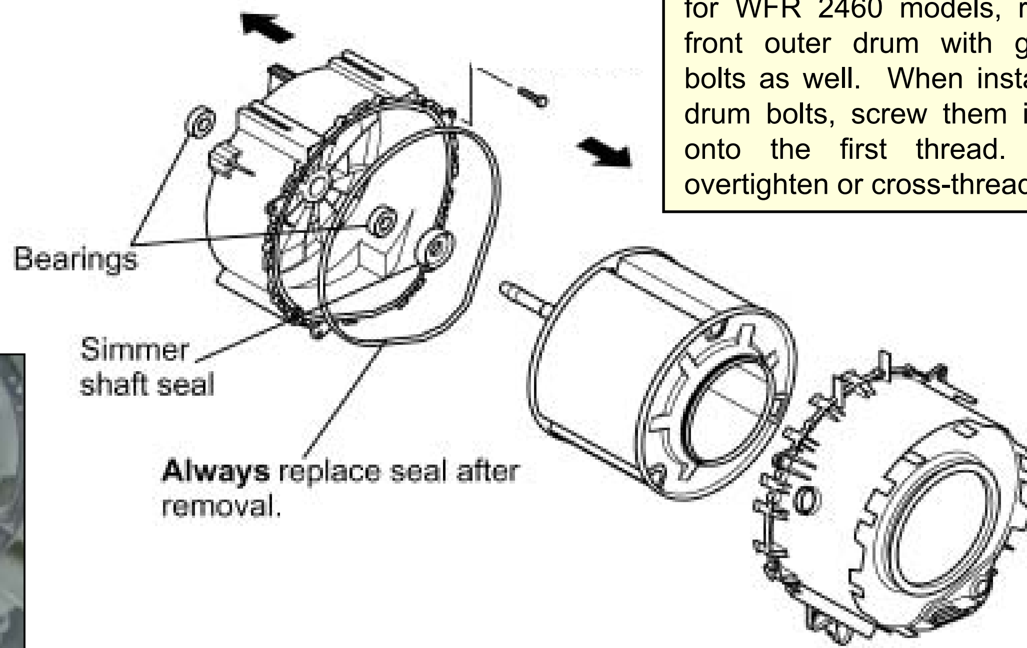
Drum

The drum cannot be removed until the outer tub has been removed.

Disassembly -- Drum (6), Rear Bearing







HINT: When installing rear bearings for WFR 2460 models, replace the front outer drum with gasket and bolts as well. When installing outer drum bolts, screw them in by hand onto the first thread. Do not overtighten or cross-thread them.

Bearing assembly

The bearing assembly cannot be removed until the outer tub has been removed.

Drum

The drum cannot be removed until the outer tub has been removed.

BOSCH

Disassembly -- Drum Drive Motor

To remove the motor, the rear panel must be removed. Then remove the self-tensioning belt as well as the two bolts for attaching the motor. Then pull out the motor towards the rear.





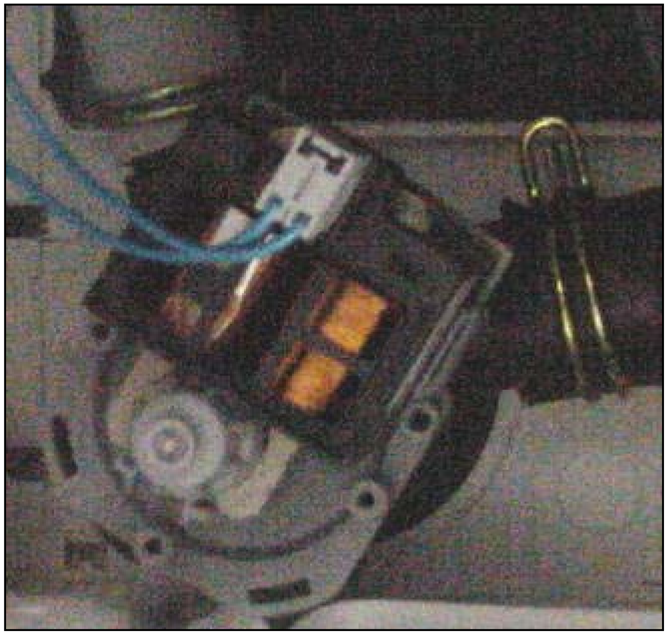




Bolts

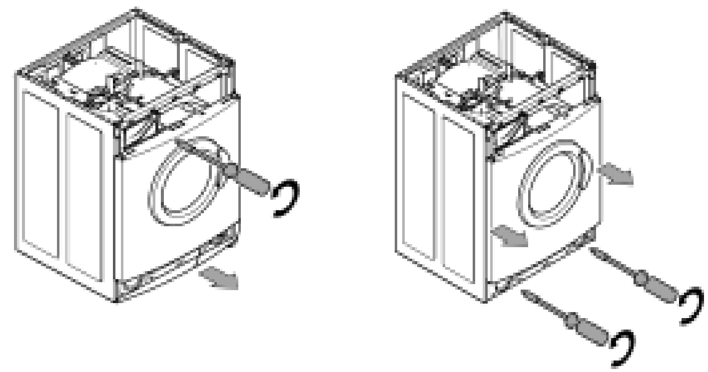
BOSCH

Disassembly -- Drain Pump



Removal:

1. Remove the front panel
2. Loosen and remove the hoses
3. Disconnect the power
4. Loosen the bolt (see photo on right)
5. Remove the pump





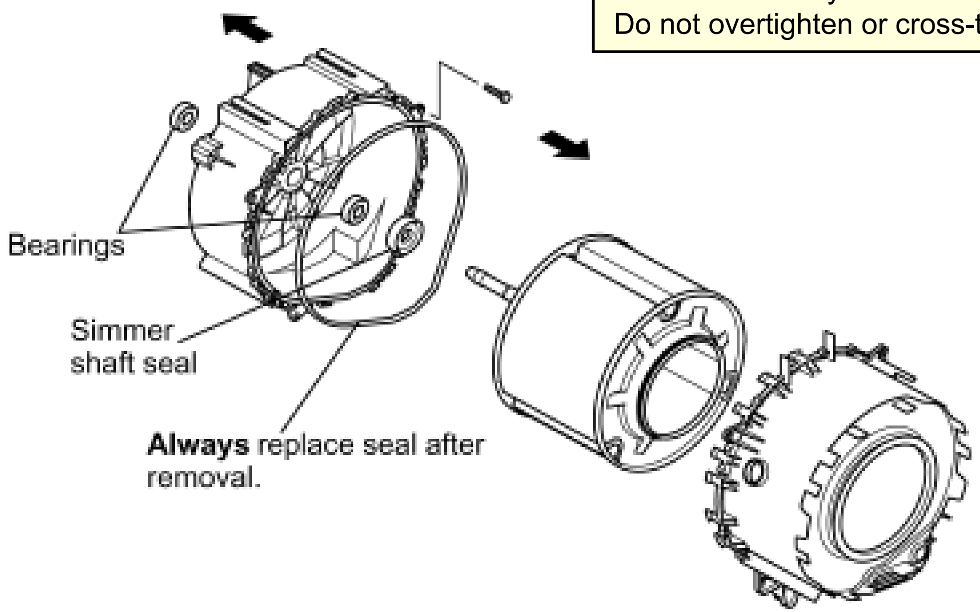


…and that's all there is to taking apart the washers!

Reassembly -- WFR 2460 Outer Drum

The WFR 2460 outer drum is provided by a different manufacturer than the WFL 2060 outer drum. Both the front and rear outer drums should be replaced at the same time (if one needs to be replaced).

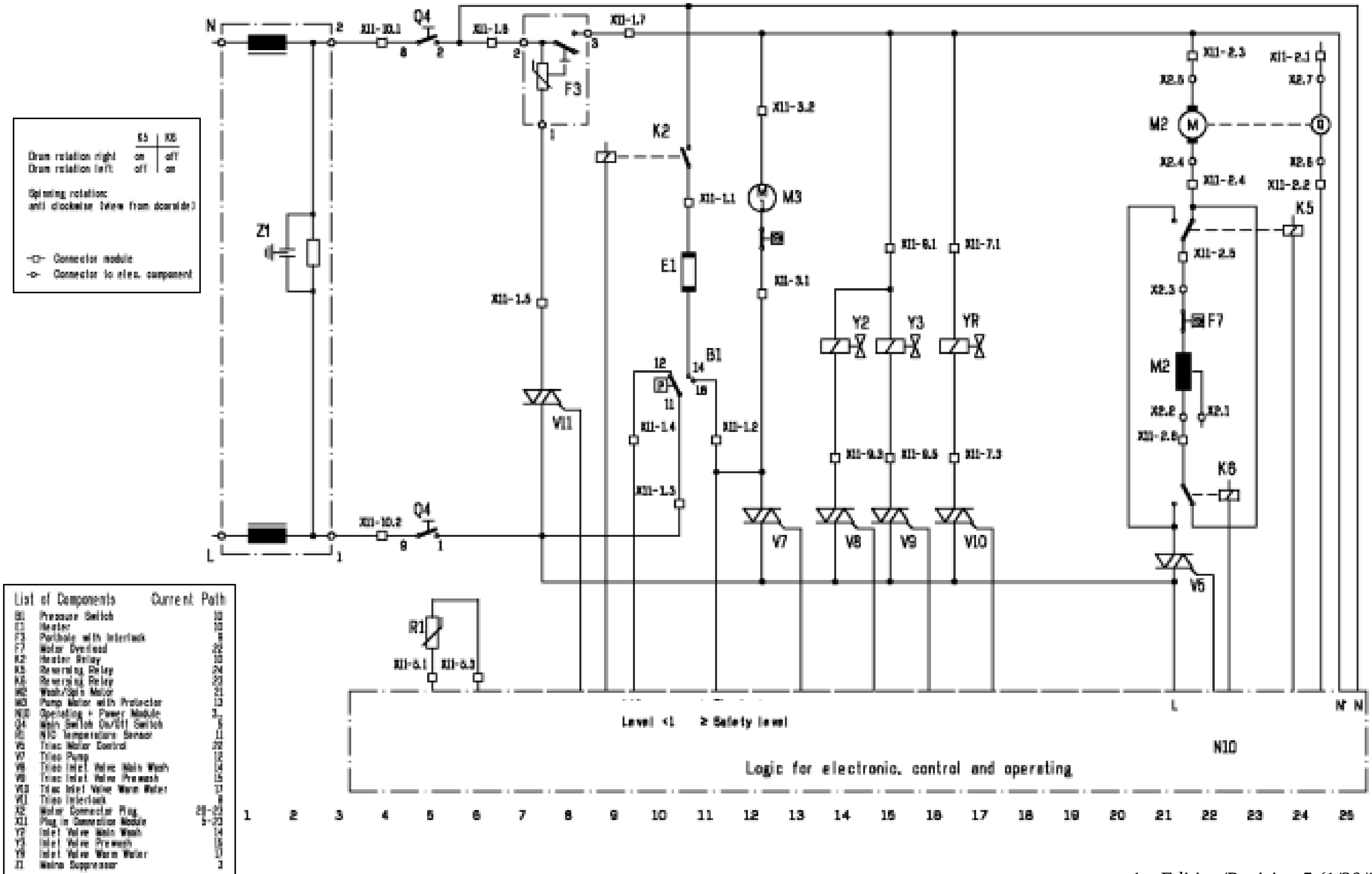
HINT: When installing outer drum bolts, screw them in by hand onto the first thread. Do not overtighten or cross-thread them.



NOTE: WFL 2060 drums use a separate gasket with bolts kit # 265964. WFR 2460 drums have the gasket and bolts included with front drum # 238410 (where the gasket and bolts aren't provided separately).

HINT: Do not overtighten screws/bolts.

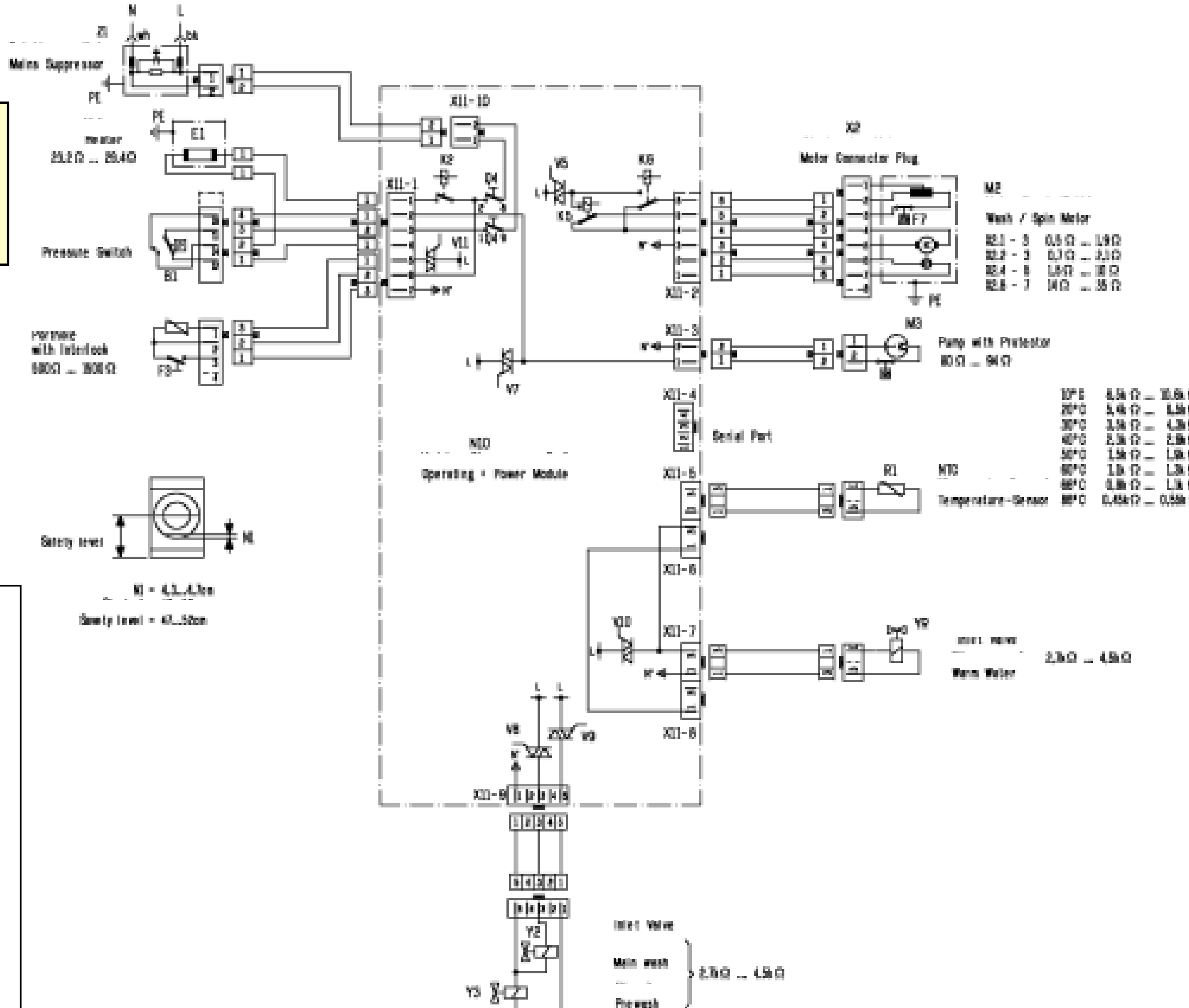
WFL 2060UC Circuit Diagram



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WFL 2060UC Wiring Diagram

HINT: "Mains" is the European term for "power", so "mains suppressor" = "power (surge) suppressor".

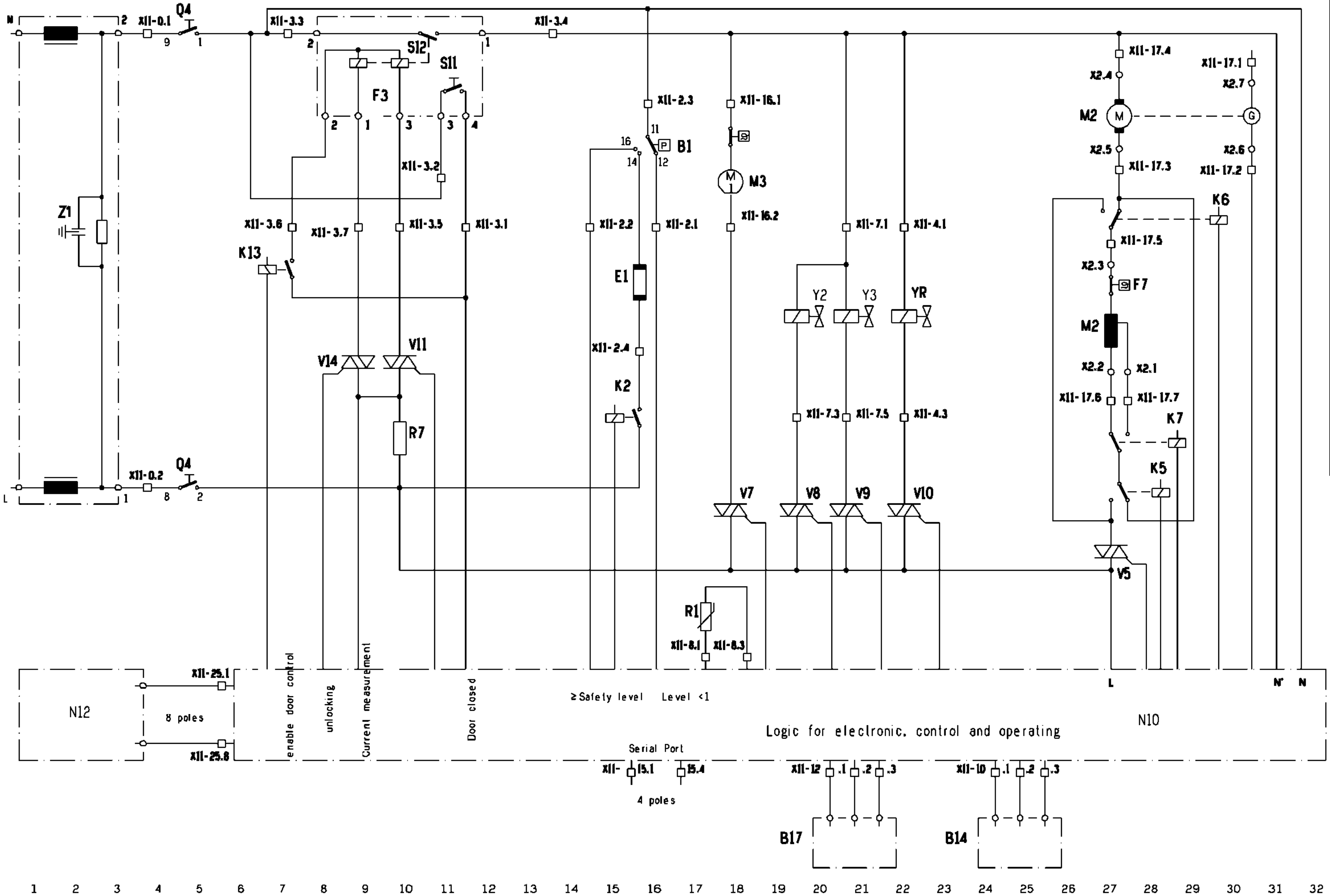


F7 Motor Overload
K2 Heater Relay
K5 Reversing Relay
K6 Reversing Relay
Q4 Main Switch On/Off Switch
V5 Triac Motor Control
V7 Triac Pump
V8 Triac Inlet Valve Main Wash
V9 Triac Inlet Valve Prewash
V10 Triac Inlet Valve Warm Water
V11 Triac Interlock

	K5	K6
Drum rotation right	on	off
Drum rotation left	off	on

PE : Main Earth
Heater
Motor

WFR 2460UC Circuit Diagram



List of Components		Current Path
B1	Pressure Switch	16
B14	Pressure Sensor	23
B17	Flowmeter (Inlet Valve Prewash)	19
E1	Heater	16
F3	Porthole with Interlock	9
F7	Motor Overload	28
K2	Heater Relay	15
K5	Reversing Relay	28
K6	Reversing Relay	30
K7	Relay (Motor Field)	29
K13	Relay Locking	6
M2	Wash/Spin Motor	27
M3	Pump Motor	18
N10	Operating + Power Module	6..
N12	LCD-Display Module	1...3
Q4	Main Switch On/Off Switch	5
R1	NTC Temperature Sensor	17
R7	Shunt	10
S11	Contact - Door closed	11
S12	Contact - Door locked	10
V5	Triac Motor Control	27
V7	Triac Pump	18
V8	Triac Inlet Valve Main Wash	20
V9	Triac Inlet Valve Prewash	21
V10	Triac Inlet Valve W/Water	22
V11	Triac Interlock	10
V14	Triac Interlock (unlocking)	9
X2	Motor Connector Plug	27-30
X11	Plug in Connection Module	8-31
Y2	Inlet Valve Main Wash	20
Y3	Inlet Valve Prewash	21
YR	Inlet Valve Warm Water	22
Z1	Mains Suppressor	3

	K5	K6
Drum rotation right	on	off
Drum rotation left	off	on

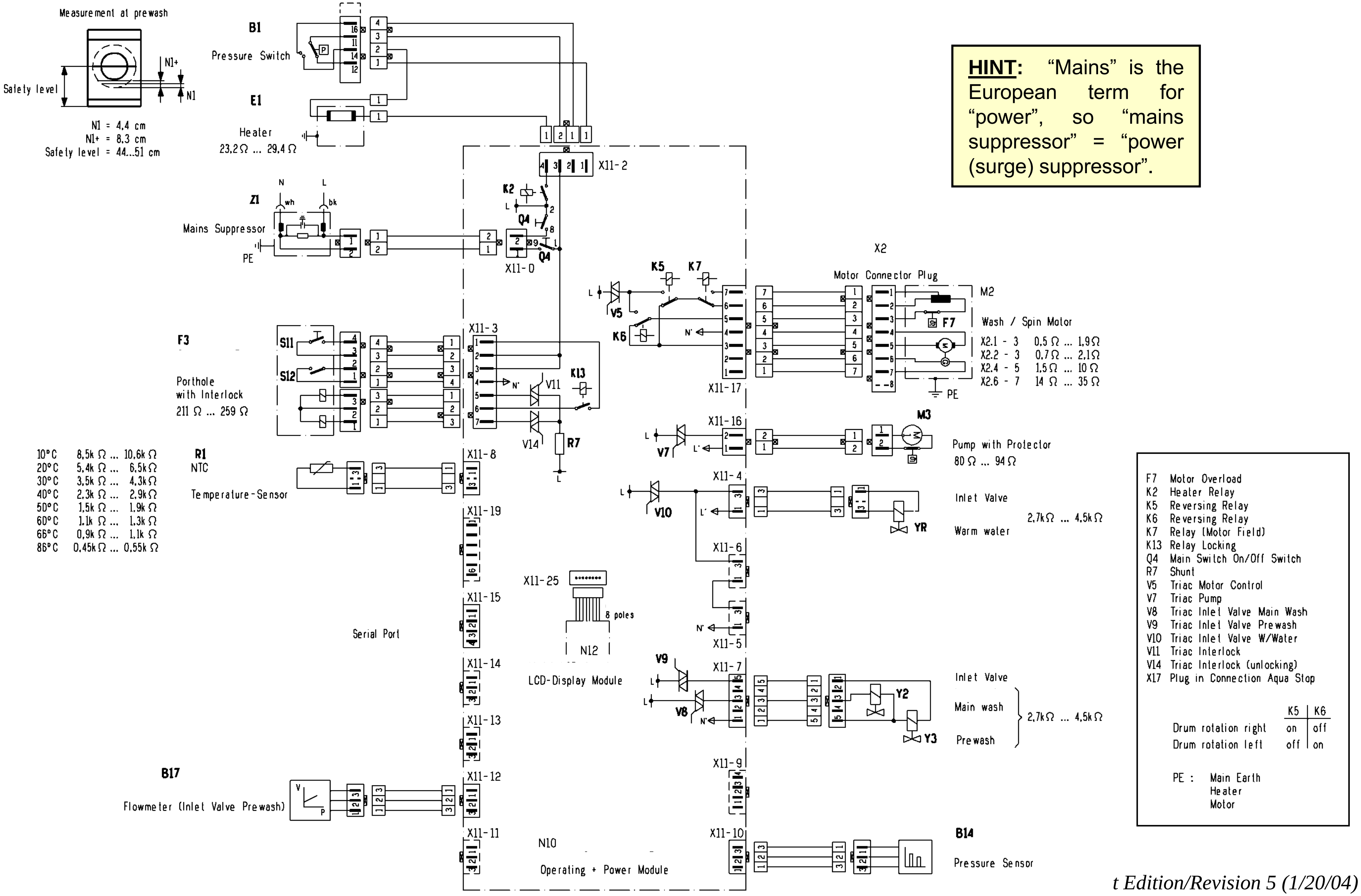
Spinning rotation:
anti clockwise (view from doorside)

-□- Connector module
-○- Connector to elec. component

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WFR 2460UC Wiring Diagram

HINT: "Mains" is the European term for "power", so "mains suppressor" = "power (surge) suppressor".



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WFL 2060 & WFR 2460 Service Tips -- Ratings

- Rated 240VAC, 15A, 60 Hz (uses 11A max.).
- Hot & cold water inputs, 3/4” NPT
- Two concrete vibration dampeners, top & front
- Uses NEMA 6-15P 240V, 15A, 3-wire plug →



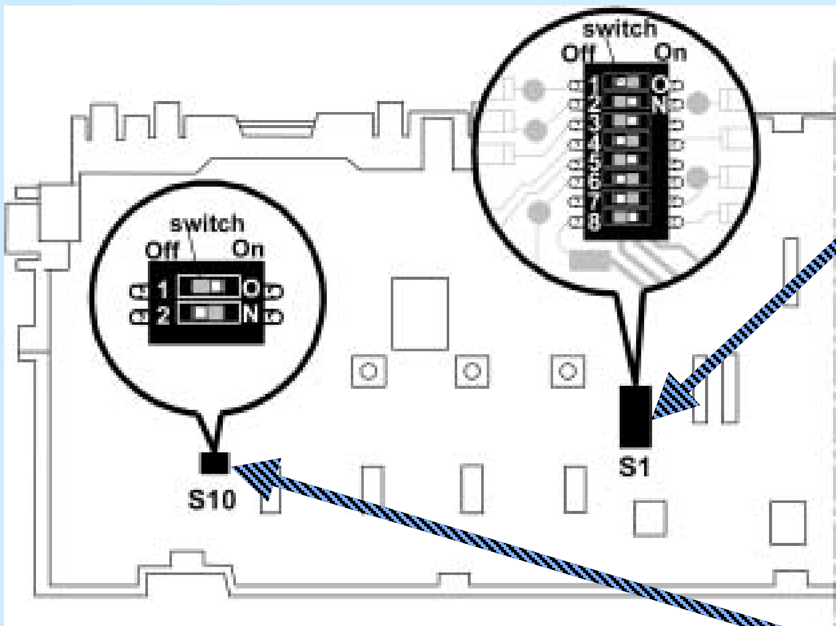
- Spin speeds 600-1000 RPM (WFL 2060) or 600-1200 RPM (WFR 2460)
- Uses *Polinox* outer drum - quieter & dent resistant compared to ss
- UL listed (U.S. & Canada)



BOSCH

WFL 2060 Service Tips -- Configuring Replacement Control Modules

Replacement **WFL 2060** control modules (# **481304**) aren't configured. Please follow these instructions to set on-board switches to configure replacement modules.



CAUTION: If settings aren't done correctly, washers can eventually be damaged!

Switch S1

Switch #	Setting	Notes
1	off	Sets spin speed to 1000 RPM max.
2	on	
3	on	
4	off	Sets panel buttons to *Power Wash*, *Rinse Plus* & *Quick Wash* and enables *spin selector* knob.
5	on	
6	off	
7	off	Sets hot water inlet on.
8	on	U.S. model variations enabled.

Switch S10

Switch #	Setting	Notes
1	on	
2	off	

CAUTION: Static electricity can damage module components. Take care to shield modules from static electricity.

HINT: Modules cannot be configured using the washer control panel.

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WFR 2460 Service Tips -- Configuring Replacement Control Modules

Replacement **WFR 2460** control modules (# **484014**) aren't configured. Please follow these instructions to configure replacement modules.

- After installing module, enter test program by first pushing and holding ***Menu*** & ***Select*** buttons, then rotating selector switch (dial) ccw to ***Permanent Press Cold*** (until display comes on).
- Push ***Menu*** button repeatedly to scroll to test ***"T5": Model Variant Coding***. ***Red*** light on ***Start/Pause*** button will be flashing. Push ***Start/Pause*** button to enter test ***T5*** to change #'s (***red*** light will stop flashing when test ***T5*** has been entered).
- Push ***Menu*** button to scroll to each # (when desired # is flashing). For each #, push ***Select*** button until correct setting is chosen, then push ***Start/Pause*** button to save setting. Repeat until settings for all eight #'s are saved -- U.S. washers **must** show **42010011**.
- When settings for all eight #'s are saved, exit test program by rotating selector switch (dial) cw to ***Off***.

NOTE: Note original equipment washer modules are factory configured and CANNOT be changed in the field.

Sample Displays

42010011 T5: Variant

Push Menu button to select 1st # for max. spin speed (until 1st # flashes), then push Select button until "4" (for 1200 RPM max.) is chosen. Push Start/Pause button to save setting.

Max. spin speed	
2!	1000 RPM
3!	1100 RPM
4!	1200 RPM
5!	1300 RPM
6!	1400 RPM
7!	1500 RPM
8!	1600 RPM

42010011 T5: Variant

Push Menu button to select 2nd # for water inlet (until 2nd # flashes), then push Select button until "2" (hot water) is chosen. Push Start/Pause button to save setting.

Water inlet	
0!	Without Aqua stop, cold water
1!	With Aqua stop, cold water
2!	Without Aqua stop, hot water

42010011 T5: Variant

Push Menu button to select 7th # for language (until 7th # flashes), then push Select button until "1" (for English) is chosen. Push Start/Pause button to save setting.

Language	
0!	German
1!	English
2!	French
3!	Dutch
4!	Italian
5!	Spanish
↓	
E!	Polish

NOTE: See test program page 61 for all test T5 settings.

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WFL 2060 & WFR 2460 Service Tips -

- Drum Drive Motor

Motor / motor actuation

Function:

The motor is controlled (open-loop and closed-loop) by phase control. The actual speed value of the tachogenerator signal is compared with the required value of the electronics module. The direction of rotation is changed by two deenergised reversing relays. An integrated protector in the motor winding disconnects the motor in the event of an overload. The control does not disconnect the motor with a tachogenerator fault but continues trying to restart the motor. A motor fault is displayed only at the end of the programme. For spin speeds > 1000 min^{-1} a field reversal relay is actuated from 800 min^{-1}. This clears part of the motor field winding and increases the speed. The following speeds apply to the washing machine with empty drum:

Wool:	27 $min^{-1} \pm 5$ %
Wetting:	35 $min^{-1} \pm 3$ %
Rinsing:	50 $min^{-1} \pm 3$ %
Washing:	50 $min^{-1} \pm 3$ %
Spinning:	Spin speeds $\pm$ 2.5 %
Measured speed (imbalance):	100 $min^{-1} \pm 1$ %

If an unbalanced load is detected, the speed is reduced in the final spin cycle as follows:

Appliance at min^{-1}	Start-up attempts			
	1–5	6–8	9–15	> 15
1200	n^{max} min^{-1}	1100min^{-1}	850min^{-1}	0 min^{-1}
1100	n^{max} min^{-1}	850min^{-1}	700min^{-1}	0 min^{-1}

Before the spin speed is accelerated, the imbalance is scanned for 20 seconds at 100 min^{-1}. The imbalance is scanned up to 15x (up to 2x for wool).

If there is a large imbalance, the spin cycle is terminated at approx. 100 min^{-1}.

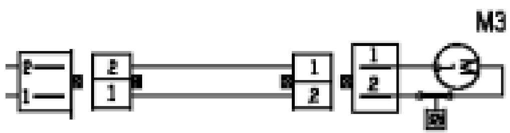


HINT: Note "**RPM**" is the European symbol for **RPM**.

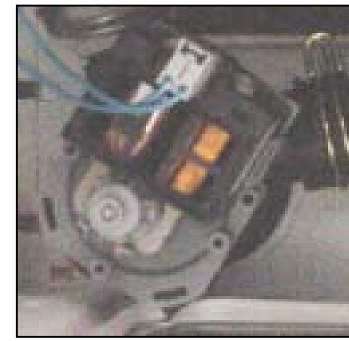
WFL 2060 & WFR 2460 Service Tips -
- Drain Pump

Function:

The pump features a thermal protection device.







Specifications:

Nominal voltage	230 – 240	V
Frequency	60	Hz
Resistance	80 - 94	Ω
Delivery head	1.0	m
Delivery rate	18	l/min

Removal:

1. Remove the front panel
2. Loosen and remove the hoses
3. Disconnect the power
4. Loosen the bolt (see photo on right)
5. Remove the pump

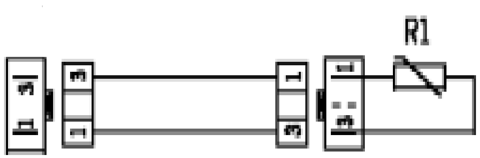


WFL 2060 & WFR 2460 Service Tips -
- NTC & Heater

NTC

The operating range of the NTC lies between –5 °C and 103 °C. If a power cut or short-circuit occurs, the programme runs its course without an error display. "NTC short-circuit" or "NTC power cut" is displayed in the test programme. The NTC is connected to the heating flange and is sealed with the heater seal. Before the NTC can be removed, the heater must be disconnected.

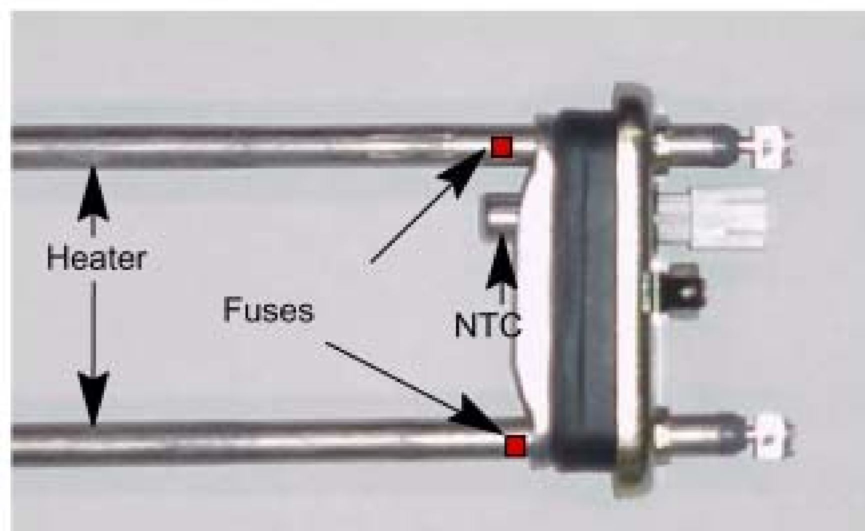
Temperature in °C	Resistance in kΩ
10	8.5 – 10.6
20	5.4 – 6.5
30	3.5 – 4.3
40	2.3 – 2.9
50	1.5 – 1.9
60	1.1 – 1.3
66	0.9 – 1.1
86	0.45 – 0.55



Heating element

Nominal power	2000W
Nominal voltage	230VAC
Power tolerance	+5%.......–10%
Resistance approx.	23.2 - 29.4Ω

The heater has two integrated fuses (boil-dry protection). The fuses cannot be changed. The heater is changed at the front after the front panel has been removed.



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WFL 2060 & WFR 2460 Service Tips -

- Door Lock

Door locking feature

Function:

The locking feature consists of a magnetic lock with two coils, two switching contacts and an emergency lock release. One coil is used for locking and the other for unlocking. One switching contact is the transducer for the control and the other contact actuates the power (motor, pump and valves). The lock can be mechanically unlocked via the emergency lock release (behind the cover flap on the pump).
The locking feature is actuated if:

the drum rotates for longer than 2 seconds at more than 60 min^{-1} (Spin acceleration).

the detergent-solution temperature is above 60 °C.

the door lock level (water level) is exceeded.

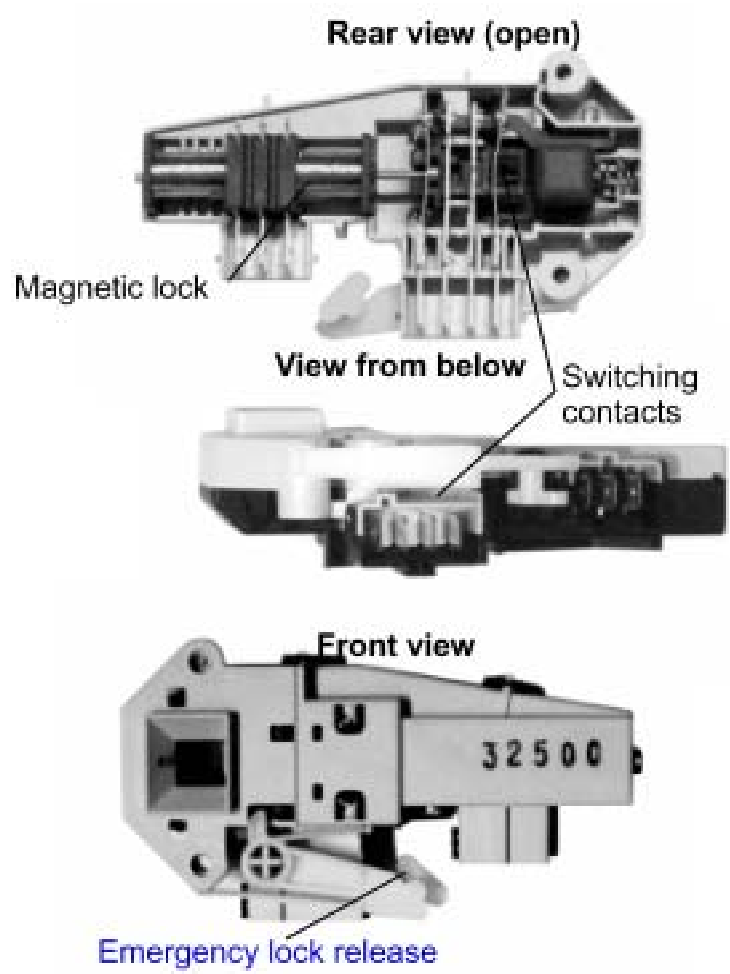
Specifications:

Magnetic lock:

– Coil resistance	:	235 Ω +/– 10%
– Switching time	:	<40 ms
– Contact 1–2	:	unlock
– Contact 2–3	:	lock

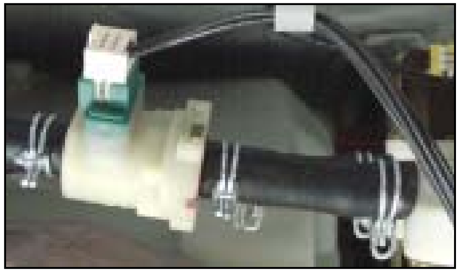
Contacts:

– Contact loadability 1–2	:	250VAC; 16 A
– Contact loadability 3–4	:	250VAC; 10 mA



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WFR 2460 Service Tips -- Water Flow Meter



Flow sensor

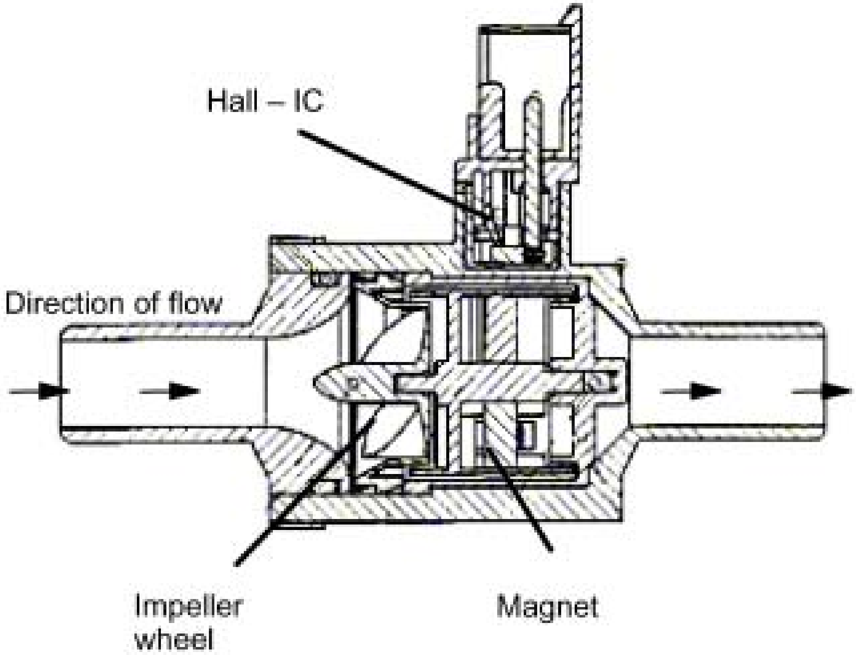
Function:

The flow sensor measures the volume of water which flows via the prewash valve into the detergent dispenser. The flow sensor consists of an impeller wheel with a magnet core and a Hall IC. When the impeller wheel is rotating, the magnet emits impulses to the Hall IC. When installing the flow sensor, ensure that the direction of flow is correct. The component is marked with a small arrow.

Specifications:

Voltage supply:	5 – 18 V
Detected flow rate:	0 – 12 l/min

If there are air bubbles in the water, even higher flow rates may be detected.



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WFR 2460 Service Tips -- Mechanical & Analog Pressure Switches

The water level (pressure switch) system consists of a mechanical pressure switch and an analog pressure switch.

Mechanical Pressure Switch

The mechanical pressure switch (*orange*) has (3) switching positions:

- Water level < level 1
- Water heating level
- Overflow level

Analog Pressure Switch

The analog pressure switch (*black*) determines the different water levels in the various wash programs. It is piezo-electric (pressure on it generates a voltage) and generates between 0.5 - 3.5 VDC.

HINT: Its not helpful to measure the analog pressure switch voltage because its shown on the digital display while the washer is in the test program.

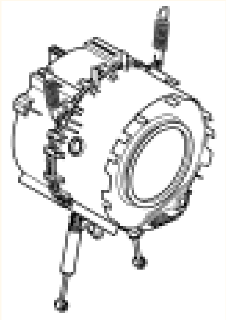


WFR 2460 Service Tips -- Polinox Outer Drum (Tub)

POLINOX TUB

Lifecycle Test	2,500 washes = 10 years Highest spin 300 consecutive times (wash-spin, wash-spin, etc. - have tested up to 900 wash-spin cycles)
Heat Resistant	Up to 130°C (266°F)
Stability	Dropped from a great height, won't dent like Stainless Steel Used on Mercedes-Benz bumper

- Reinforced with glass fiber
- Extraordinary strength
- Very reliable
- Vibrates less/ less noisy
- Fewer parts
- Lower weight

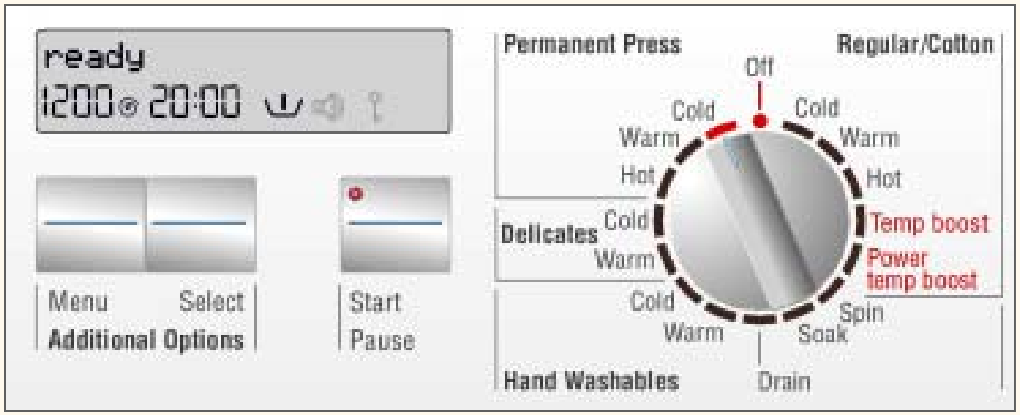


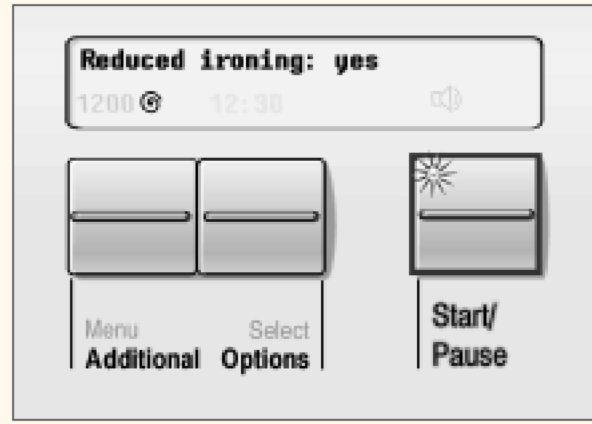


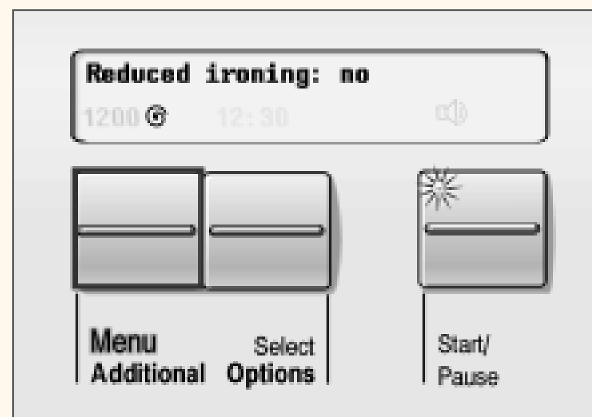
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WFR 2460 Service Tips -- Low Spin Speeds

If the WFR 2460 control doesn't allow spin speeds > 800 RPM, then the *Reduced Ironing* setting has been turned on.







HINT: To exit the ***Reduced Ironing*** mode:

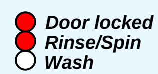
- When ***Start/Pause*** indicating light flashes **red**, press ***Menu*** button until ***Reduced Ironing*** screen appears.
- Press ***Select*** button until ***Reduced Ironing*** has been turned off.

WFL 2060 Service Tips -- Test Program (1)

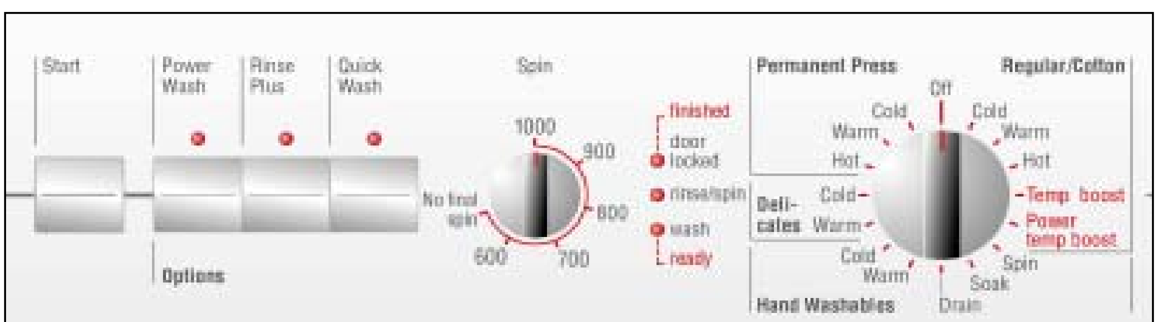
The **WFL 2060UC** washers have test programs enabling the washers to self-diagnose problems, including listing the last fault code.

<u>To enter component test program for WFL 2060 washers (to test individual parts or check last wash fault)</u>:

- Rotate *cycle selector* knob to ***Off*** position.
- <u>Push and hold</u> ***Start*** button (or ***Rinse Plus*** and ***Quick Wash*** buttons at the same time), then rotate *cycle selector* knob **ccw** to ***Permanent Press Cold*** position. After rotating *cycle selector* knob, keep holding ***Start*** button (or ***Rinse Plus*** and ***Quick Wash*** buttons) at least 3 seconds until ***Door locked*** & ***Rinse/Spin*** lights come on. Washer is now in the component test program.
- Lights will <u>*flash*</u> for wash faults below. Fault shown will be the <u>last</u> fault code on the washer (see fault chart below).
- <u>*When test program has been entered*</u>*:*
  - ***Door locked*** & ***Rinse/Spin*** lights will come on (and stay on).



  - Select individual parts to test by rotating *cycle selector* knob as shown on next page. <u>Don't rotate *cycle selector* knob through ***Off*** position while selecting tests</u> (so washer won't shut off).
  - Once part to test has been selected, start test by pushing ***Start*** button. Push ***Start*** button again to end any test (except for rotating *cycle selector* or *spin speed* knob to end *motor* test).
- To exit test program, push ***Start*** button.



<u>NOTE</u>: Fault displayed will be **<u>1st</u>** fault that occurred since last time washer was turned on.

<u>NOTE</u>: Door locks for all water fill and drain tests. Door unlocks ~ 30 seconds after <u>drain pump</u> test ends (after all water has been drained).

WFL 2060 Service Tips -- Test Program (2)

Test parts individually as follows:

- ***Motor*** – To start test, rotate *cycle selector* knob to ***Regular/Cotton Hot*** (*not through **Off** position*), then push ***Start*** button. To end test, rotate *cycle selector* knob out of ***Regular/Cotton Hot*** position or rotate *spin speed* knob.

  During test, *motor* turns drum counterclockwise for 6 seconds (@ 50 RPM), pauses for 2 seconds & turns drum clockwise for 4 seconds. *Drain pump* comes on while drum is checked for imbalance and *motor* turns drum clockwise gradually to top speed, slows it down and stops it (***Rinse/Spin*** light turns off when max. speed reached). Test ends automatically after ~ 3 minutes.
- ***Drain pump*** – To start test, rotate *cycle selector* knob to ***Temp Boost*** (*not through **Off** position*), then push ***Start*** button. To end test, push ***Start*** button again (since test doesn't end). *Drain pump* runs -- listen for *drain pump* running or look for water draining from washer.
- ***Heater*** – To start test, rotate *cycle selector* knob to ***Power Temp Boost*** (*not through **Off** position*), then push ***Start*** button. To end test, push ***Start*** button again (since test doesn't end quickly). Water fills to water level 1 (heating level) and is heated to maximum temperature. To save time, measure current draw into washer (over black wire to surge protector) after water has completely filled -- if ~ 7A, then heater has come on and is heating normally.

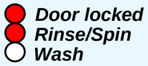
> **HINT:** Water doesn't automatically drain for water filling tests such as ***heater***, ***hot water valve*** and all ***dual cold water valve*** tests. Use ***drain pump*** test to drain water before running next test….To save time running water valve tests (since water doesn't stop filling), do visual check of water filling into dispenser, then push ***Start*** button to end test.

- ***Hot water valve*** – To start test, rotate *cycle selector* knob to ***Spin*** (*not through **Off** position*), then push ***Start*** button. Water. To end test, push ***Start*** button again (since water doesn't stop filling). Do visual check by pulling dispenser door slightly (to avoid splashing) to view water flowing into left side of dispenser.
- ***Dual cold water valve (Pre-wash & Wash)*** – To start test, rotate *cycle selector* knob to ***Soak*** (*not through **Off** position*), then push ***Start*** button. To end test, push ***Start*** button again (since water doesn't stop filling). Do visual check by pulling dispenser door slightly (to avoid splashing) to view water flowing into center & right side of dispenser.
- ***Dual cold water valve (Wash)*** – To start test, rotate *cycle selector* knob to ***Drain*** (*not through **Off** position*), then push ***Start*** button. To end test, push ***Start*** button again (since water doesn't stop filling). Do visual check by pulling dispenser door slightly (to avoid splashing) to view water flowing into left side of dispenser.
- ***Dual cold water valve (Pre-wash)*** – To start test, rotate *cycle selector* knob to ***Hand Washables Warm*** (*not through **Off** position*), then push ***Start*** button. To end test, push ***Start*** button again (since water doesn't stop filling). Do visual check by pulling dispenser door slightly (to avoid splashing) to view water flowing into right side of dispenser.
- ***Indicating lights*** – To start test, rotate *cycle selector* knob to ***Hand Washables Cold*** or ***Delicates Warm*** (*not through **Off** position*), then push ***Start*** button. To end test, push ***Start*** button again (since test doesn't end). ***Wash*** light comes on for 3 seconds, then ***Rinse/Spin*** light comes on for 3 seconds and then ***Door locked*** light comes on. ***Door locked*** light won't go out if door still locked.

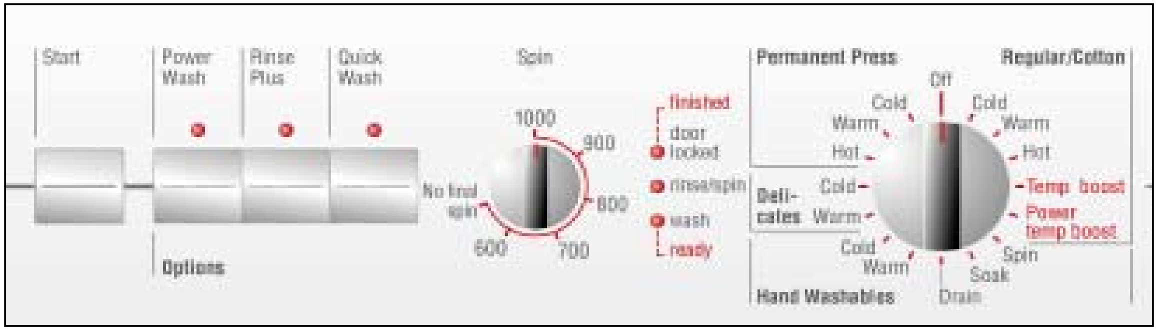
WFL 2060 Service Tips -- Test Program (3)

<u>To enter comprehensive test program for WFL 2060 washers (to test entire washer or check last wash fault)</u>:

- Rotate *cycle selector* knob to ***Off*** position and rotate *spin speed* knob to 1000 RPM.
- <u>Push and hold</u> ***Start*** button (or ***Rinse Plus*** and ***Quick Wash*** buttons at the same time), then rotate *cycle selector* knob **cw** to ***Power Temp Boost*** position. After rotating *cycle selector* knob, keep holding ***Start*** button (or ***Rinse Plus*** and ***Quick Wash*** buttons) at least 3 seconds until ***Door locked*** & ***Rinse/Spin*** lights come on. Washer is now in the comprehensive test program.
- Lights will <u>*flash*</u> for wash faults -- fault shown will be the <u>last</u> fault code on the washer (see fault chart on following page).
- <u>*When test program has been entered*</u>*:*
  - ***Door locked*** *&* ***Rinse/Spin*** lights will come on (and stay on).
  - See chart on 5th test program page for test sequence.



- Test ends automatically (after ~ 2 minutes, 20 seconds when ***Door locked*** & ***Rinse/Spin*** lights come on) and <u>automatically restarts</u>. To end test (at any time), rotate *cycle selector* knob out of ***Power Temp Boost*** position (to any position). If a fault has occurred during test, check fault chart to determine failed part.



<u>NOTE</u>: Fault displayed will be **<u>1st</u>** fault that occurred since last time washer was turned on.

<u>NOTE</u>: Do not push ***Start*** button (or ***Rinse Plus*** & ***Quick Wash*** buttons) within 5 seconds of rotating *cycle selector* knob to ***Power Temp Boost*** position while selecting comprehensive test program or while test is restarting. If so, <u>individual part (component) test program</u> will begin -- use ***Start*** button to manually advance through each step.

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WFL 2060 Service Tips -- Test Program (4)

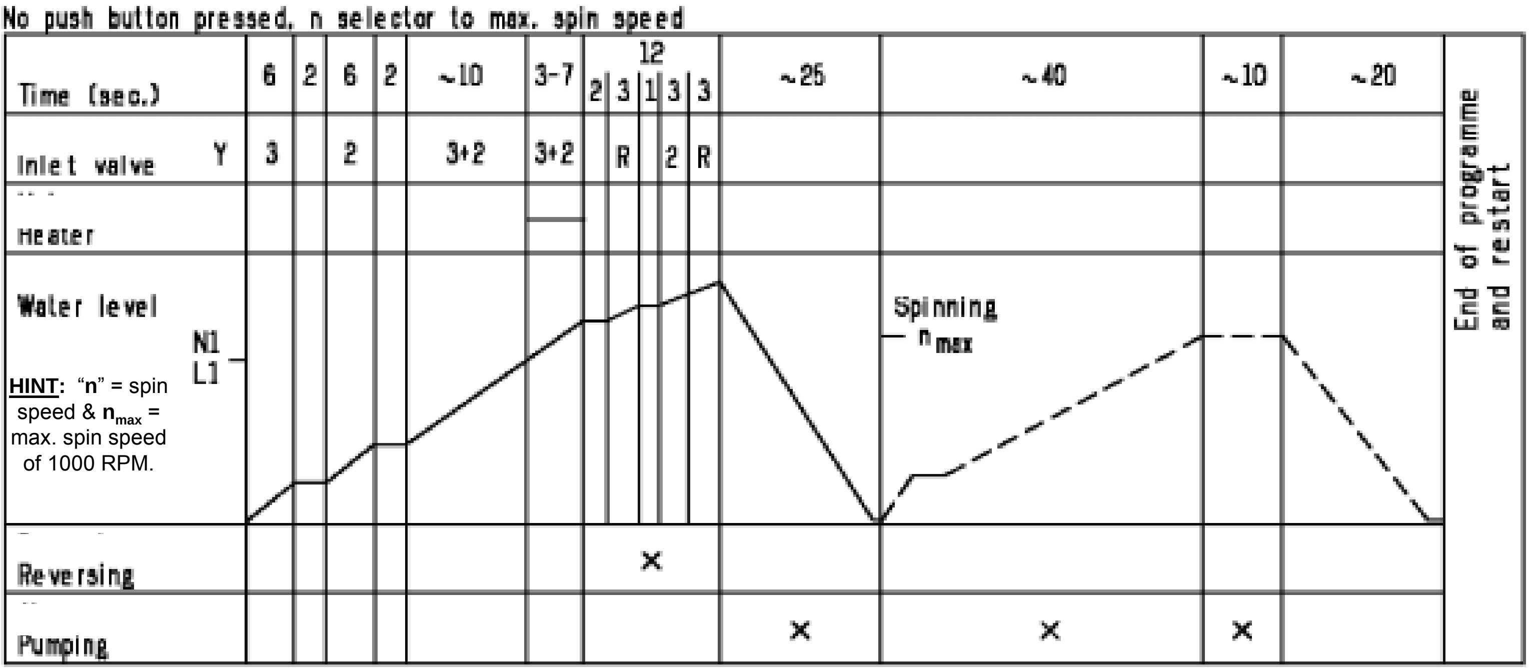
Fault	Possible Causes	Flashing Lights	Program Fault Occurred	
Door open or won't lock	❑ Door left open. ❑ Faulty door latch or door lock.	○ Door locked ○ Rinse/Spin ● Wash	**Wash**	
No water filling	❑ Water shut off. ❑ Inlet strainer filters blocked. ❑ Water pressure too low (< 1 bar)	○ Door locked ● Rinse/Spin ○ Wash	**Wash**	
No heating	❑ Faulty heater. ❑ Voltage too low. ❑ Excessive scale on heating element.	○ Door locked ● Rinse/Spin ● Wash		**Test**
No draining	❑ Blocked sensor. ❑ Faulty water level controller. ❑ Faulty or blocked drain pump.	● Door locked ○ Rinse/Spin ○ Wash	**Wash**	
Motor won't run	❑ Faulty speed control. ❑ Triac short-circuited. ❑ Faulty reversing relay.	○ Door locked ● Rinse/Spin ○ Wash		**Test**
Overheating	❑ Faulty control module.	● Door locked ● Rinse/Spin ○ Wash		**Test**
NTC failed (short or open circuited)	❑ Faulty wire harness. ❑ Faulty NTC.	● Door locked ● Rinse/Spin ● Wash		**Test**

HINT: Using the test program can cut down repair times & eliminate repeat calls from misdiagnosing problems.

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WFL 2060 Service Tips -- Test Program (5)

Comprehensive Test Sequence Chart



HINT: ***Rinse/Spin*** light goes out when max. speed of 1000 RPM is reached. Both ***Door locked*** and ***Rinse/Spin*** lights come on when test has ended.

HINT: Water valves are tested in order:

- *Left side of cold water valve (Pre-wash)* – flows into right side of dispenser.
- *Hot water valve* – flows into left side of dispenser.
- *Left & right sides of cold water valve (Wash)* – flows into right side & center of dispenser.

HINT: Before leaving, make sure door isn't locked. To drain washer to open locked door (locked during wash or test):

- Exit test program by turning washer off. Turn washer on, then rotate *cycle selector* knob to ***Drain*** and push ***Start*** button.
- Door can be opened after washer drains and ***Door locked*** light flashes (***Door locked*** light flashes ~ 2 minutes after washer drains).

To exit test program (from any test), turn unit off by pressing "***ON/OFF***" button.

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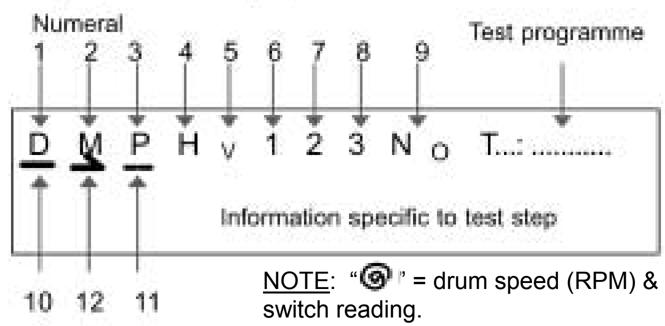
WFR 2460 Service Tips -- Test Program (1)

The **WFR 2460UC** washers have test programs enabling the washers to self-diagnose problems, including listing the last 8 fault codes.

Selecting test programme

Operation	Implementation	Display
Activate	Rotate selector switch to ***Off*** position. Press & hold ***Menu*** & ***Select*** buttons (located under display), then rotate selector switch **ccw** to ***Permanent Press Cold*** until display comes on.	>START>MENU T1: ERRORS LA – Er: .... When the test programme is accessed, the last error is displayed with LA–Er: See next page for error codes.
Select	Select the particular test programme with the menu button **HINT**: Push ***Menu*** button to scroll through all tests to select desired test. Red light on ***Start/ Pause*** button flashes to show tests can be selected. When tests are started, red light stays on constantly. Push ***Menu*** to exit test & select more tests.	T2: SAFETY (Safety) T3: AUTOM (Automatic) T4: MOTOR (Motor) T5: MODEL (Coding) T6: DISPLAY (Displays) T7: SELECTOR (Switch) T8: LEVEL 1 (Analogue sensor) T9: LEVEL 2 (W controller) T10: SENSOR (Turbidity sensor) T11: FLOW (Flow rate sensor) T12: UPDATE (At present not for customer service) T13: VALVE 1 (Prewash) T14: VALVE 2 (Main wash) T15: VAL 1+2 (Fabric softening) T16: VAL H (Hot water) T17: PUMP (Pump) T18: HEATER (Heater) T19: NOISE (At present not for customer service)
Start	Press the "Start / Pause" button	See particular test programme
Deactivate	Rotate selector switch to ***Off*** position.	Appliance is switched off

Displays in test programme



NOTE: "◎" = drum speed (RPM) & "**n**" = pressure switch reading.

Numeral	Displayed letter	Component / Function	
1	D	Door	
2	M	Motor	
3	P	Pump	
4	H	Heater	
5	V	Valve	
6	1	Prewash valve	
7	2	Cold water valve	
8	3	Hot water valve	
9 N	0	0 level	Water levels
9 N	H	Heat level	
9 N	D	Door level	
10	▬	Component actuated	
11	......	Component not actuated	
12	↻	Clockwise rotation (cw)	
12	↺	Anti-clockwise rotation (ccw)	

WFR 2460 Service Tips -- Test Program (2)

The last 8 fault codes are stored & displayed!

T1: Error (error displays).

The programme can be ended with the "Start / Pause" button. The errors can be selected with the "Menu" button. Only the errors of the last 8 wash programmes are stored and displayed.

Sequence:

Time/Operation	Display	Note
HINT: # of errors reads "**0**" for faults which didn't occur. Look at # of errors, not error #, to see if faults occurred.	>>MENU T1: ERRORS 7– Er : 12 Number of errors (7) / Error number (12)	The error frequency is displayed on the lower line and the error number on the right. **HINT**: Scroll thru all errors to check if any occurred.

Display	Error	Possible cause	Remedial action
Er: 01	Door open	Door switch not actuated	Close door, check lock
Er: 02	Door lock cannot be released		
Er: 03	Door lock cannot be locked		
Er: 04	Door actuation defective	Triac defective / relay stuck	Replace controller
Er: 05	NTC interruption	Cable break / NTC damaged	Rectify cable break / replace NTC
Er: 06	NTC short-circuit	Cable short-circuit / NTC damaged	Rectify cable short-circuit / replace NTC
Er: 07	Unexpected heating	Temperature increase without actuation of heater	Start T/P18 heater test programme
Er: 08	Heating time exceeded	After 105 min.	Start T/P18 heater test programme
Er: 09	Uncontrolled motor acceleration	Motor triac defective	Start T/P4 motor test programme
Er: 10	Motor does not rotate	No / incorrect tacho-generator signal	Start T/P4 motor test programme
Er: 11	Reversing relay test not passed		Start T/P4 motor test programme
Er: 12	Flow rate sensor outside operating range	Sensor / line	Check line Replace sensor
Er: 13	Flow rate sensor detects low water level	Water inlet / sensor	Start T/P11 sensor test programme
Er: 14	Water inlet time exceeded	W controller after 6 min.	Start T/P9 controller test programme
Er: 15	Pumping time exceeded	0 level not reached within 6 min.	Check pump circuit
Er: 16	Safety level reached		Start T/P8 and 9 level test programme
Er: 17	Pressure sensor		Check line Replace sensor
Er: 18	Calibration of pressure sensor not possible		Start T/P8 level test programme
Er: 19	Aqua stop fault	Aqua stop actuated	Eliminate leaks
Er: 20	Turbidity sensor	Calibration not possible	Start T/P10 sensor test programme
Er: 21	Update		
Er: 22	Spin cycle terminated	After 15 start-up attempts	Start T/P4 motor test programme
Er: 23	Foam detected	Via analogue sensor	Consult customer about dosing

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WFR 2460 Service Tips -- Test Program (3)

T2: Safety (Safety test programme).

The programme ends independently and can be terminated by pressing the "Menu" button.

Sequence:

Time/Operation	Display	Note
Level controlled	D M P H V 1 **2** 3 N **H** **n 075**	Door must be locked.
30 s heating	D M P H V 1 2 3 N H n 075	**HINT:** Do not use this test as it applies to European models requiring VDE safety testing.
	n 075 is the value of the analogue pressure sensor. This value still increases slightly when the valve has been switched off.	

T3: Autom (Automatic test programme).

The programme ends independently and can be terminated by pressing the "Menu" button.

Sequence:

Time/Operation	Display	Note
5 s	D M P H V 1 **2** 3 N 0 t20 ◎0000	
2 s pause		
Dependent on level	D M P H V **1** 2 3 N **H** t20 ◎0000	
8 s	D M P **H** V 1 **2** 3 N H t20 ◎0000	
2 s pause		
3 s	D **M** P H V **1 2** 3 N H t20 ◎**0050**	Reversing starts in this position
2 s pause		
3 s	D M P H V 1 2 **3** N H t20 ◎**0000**	
2 s pause		
3 s	D M P H V **1 2** 3 N H t20 ◎**0000**	
2 s pause		
Dependent on level	D M **P** H V 1 2 3 N **0** t20 ◎0000	**NOTE:** Test takes ~ 1 minute, 20 seconds to complete.

Temperature measured on NTC

Actual speed of drum

HINT: Using the test program can greatly cut down repair times & eliminate repeat calls from misdiagnosing problems.

NOTE: "◎" = drum speed (RPM) & "**n**" = pressure switch (analogue sensor) reading.

WFR 2460 Service Tips -- Test Program (4)

T4: Motor (Motor test programme).

The programme ends independently and can be terminated by pressing the "Menu" button.

Sequence:

Time/Operation	Display	Note
6 sec.	D M P H V 1 2 3 N 0 050 ⓢ 0051	
2 sec.	D M P H V 1 2 3 N 0 000 ⓢ 0000	
4 sec.	D M P H V 1 2 3 N 0 050 ⓢ 0051	
2 sec.	D M P H V 1 2 3 N 0 000 ⓢ 0000	
HINT: ***Start/Pause*** light turns yellow when drum speeds up to 1200 RPM and slows down.	D M P H V 1 2 3 N 0 1200 ⓢ 1200	The spin cycle runs at max. speed without any reduction by the unbalanced load detection system. If there is a large imbalance, the spin cycle is terminated at approx. 100 min^{-1}.

Setpoint speed of drum

Actual speed of drum

NOTE: Test takes > 10 minutes to run.

HINT: "RPM" is the European symbol for **RPM**.

Display	Error	Cause	Remedial action
ERROR 09	Uncontrolled motor acceleration	– Triac short-circuit	Replace controller
ERROR 10	Motor does not rotate correctly	– Tachogenerator break or tacho-generator short-circuit	Check wiring and motor, if required replace
		– Field reversal relay stuck	Replace controller
ERROR 11	Reversing relay defective	– Reversing relay does not actuate or actuates continuously	Replace controller
ERROR 22	Spin cycle terminated	– Foam detected	Check trans-mitter system, consult cus-tomer service
		– Imbalance detected	After 15 (or 2 for wool) start-up attempts, imbalance is detected. Consult customer service
		– Motor fault	Check wiring and motor, if required replace

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WFR 2460 Service Tips -- Test Program (5)

T5: Model (Model coding) - for replacement modules ONLY

Following selection with the "Menu" button, the selected numeral flashes. The setting can be changed with the **Select** button. When the setting has been made, it must be stored with the "Start/Pause" button.

Display	Note
41010001 T5:Variant **HINT:** "RPM" is the European symbol for **RPM**.	Spin speed 2 ! 1000 min^{-1} 3 ! 1100 min^{-1} 4 ! 1200 min^{-1} 5 ! 1300 min^{-1} 6 ! 1400 min^{-1} 7 ! 1500 min^{-1} 8 ! 1600 min^{-1}
4**1**010001 T5:Variant	Valve 0 ! Without Aqua stop, cold water 1 ! With Aqua stop, cold water 2 ! Without Aqua stop, hot water
41**0**10001 T5:Variant	Sensor 0 ! Current analogue sensor 1 ! Reserve **Always set to 0**
410**1**0001 T5:Variant	W controller 0 ! Reserve 1 ! Mech. W controller **Always set to 1**

Display	Note
4101**0**001 T5:Variant	Washing technology 0 ! Series 1 ! Reserve **Always set to 0**
41010**0**01 T5:Variant	Outer tub 0 ! Plastic 1 ! Reserve **Always set to 0**
410100**0**1 T5:Variant **HINT:** This test shows washer configuration (**42010011**), meaning max. spin speed is 1200 RPM, it uses hot water and doesn't have the European Aqua-Stop feature. Whenever control modules are replaced, scroll through all numerals & select **42010011** for U.S. units. Note OEM washers are preset and model coding CANNOT be changed.	Language 0 ! German 1 ! English 2 ! French 3 ! Dutch 4 ! Italian 5 ! Spanish 6 ! Swedish 7 ! Danish 8 ! Norwegian 9 ! Finnish A ! Portuguese B ! Russian C ! Turkish D ! Greek E ! Polish
4101000**1** T5:Variant	Motor 0 ! Reserve 1 ! Motor with field reversal **Always set to 1**

NOTE: "Aqua-Stop" feature appears only on European models.

HINT: If spin speed cannot go above 800 RPM, washer coding wasn't set up on replacement module. To choose U.S. configuration, enter test mode & scroll through all 8 numerals to U.S. code **42010011**.

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WFR 2460 Service Tips -- Test Program (6)

T6: Display (Display test programme)

Programme duration (~ 50 sec.) can be terminated by pressing the "Menu" button.

Sequence:

Time/Operation	Display	Note
6 s		While the LEDs in the buttons flash, the display is blank
		The pixels are actuated in the upper half of the display
		All displays are actuated
		Each segment flashes individually in the lower half of the display
HINT: Test takes ~ 50 seconds to run.		The display flashes twice

Display	Error	Cause	Remedial action
	Display segment does not illuminate	– Display defective – Display is not actuated	Replace display Replace controller

T7: Selector (Selector test programme).

Can be terminated by pressing the "Menu" button. The selector must not be rotated over the "Off" position.

Sequence:

Time/ Operation	Display	Note
Selector	T7 : SELECTOR P ... •*Power Wash* •*Rinse Plus* •*Quick Wash*	When the optimisation buttons are pressed, the associated LED lights up for as long as the button is pressed. The selector indicates the positions from 1 to 15 in the lower half of the display (e.g. P01 for Regular/Cotton Cold). A signal is emitted in position 14.
Select button (when held down)	T7 : SELECTOR	
Menu button (when held down)	T7 : SELECTOR	

Display	Error	Cause	Remedial action
	Segment or LED does not illuminate when the selector or button is actuated	– Contact error – Selector is not actuated mechanically	Replace controller Check panel mechanism

WFR 2460 Service Tips -- Test Program (7)

T8: Level 1 (Analogue sensor test programme).
Can be terminated by pressing the "Menu" button.
Sequence:

Time/Operation	Display	Note
Dependent on level	D M P H v 1 2 3 N 0 I 65 n000	**HINT**: Display shows **T8:NIVEAU1**
Calibration of analogue sensor		
Dependent on level	D M P H v 1 2 3 N H I 65 n075	
10 s pause		
Dependent on level	D M P H v 1 2 3 N D I 65 n139	

Offset of analogue pressure sensor

Value of analogue pressure sensor

Display	Error	Cause	Remedial action
ERROR 17	Controller cannot analyse values of the analogue sensor	– Cable break or short-circuit – Transmitter system blocked or leaking – Pressure sensor supplies incorrect voltages – Controller	Check wiring and transmitter system, if required replace.
ERROR 18	Calibration not possible	– See above	See above

T9: Level 2 (W controller test programme).
Can be terminated by pressing the "Menu" button.
Sequence:

Time/Operation	Display	Note
Dependent on level	D M P H v 1 2 3 N 0 U00 n000	**HINT**: Display shows **T9:NIVEAU2**
Dependent on level	D M P H v 1 2 3 N H U03 n075	
	D M P H v 1 2 3 N H U15 n075	When n075 has been reached, the volume display jumps to U15

Water volume measured in l by flow rate sensor

Value of the analogue pressure sensor

Display	Error	Cause	Remedial action
ERROR 16	Overflow level is detected by analogue sensor	– Mech. W controller does not switch over	Check transmitter system for blockage, if required replace

HINT: "W controller" is the mechanical pressure switch.

HINT: ***Start/Pause*** light turns yellow when water reaches N_D level.

WFR 2460 Service Tips -- Test Program (8)

T10: Sensor (Turbidity sensor test programme).

Can be terminated by pressing the "Menu" button.

Sequence:

Time/Operation	Display	Note
HINT: Test runs ~ 15 seconds.	D M **P** H V 1 2 3 N 0 **A 1..**	The turbidity sensor is calibrated; if an error occurs, Error 20 is displayed.

Calibration value of turbidity sensor

HINT: Turbidity sensor appears only on European models.

Display	Error	Cause	Remedial action
ERROR 20	Calibration of turbidity sensor not possible	– Turbidity sensor dirty	Check transmitter system for blockage, if required replace
		– Turbidity sensor supplies incorrect values	Replace turbidity sensor
		– Line break or short	Check wiring, if required replace
		– Controller cannot analyse the values	Replace controller

T11: Flow (Flow rate sensor test programme).
Test programme has ended when U 05 is displayed, however it can be terminated by pressing the "Menu" button.
Sequence:

Time/Operation	Display	Note
Dependent on level	D M **P** H V 1 2 3 N 0 **U00 F..**	If ERROR 13, check water inlet
Dependent on level **HINT**: Test runs ~ 1 minute, but doesn't end. Press ***Menu*** button when **U05** shows on display.	D M P H V **1** 2 3 N 0 **U05 F**	If ERROR 12, check installation position of the sensor / sensor supplies incorrect values to electronics module

Water volume measured in l by flow rate sensor

Flow rate measured in l/min by flow rate sensor

Display	Error	Cause	Remedial action
ERROR 13	Flow rate sensor does not supply any values	– Water inlet	Check inlet
		– Flow rate sensor dirty	Clean flow rate sensor, if required replace
ERROR 12	Sensor supplies incorrect values to the electronics module	– Line break or short	Check wiring, if required replace
		– Flow rate sensor supplies incorrect values	Check installation position of sensor, if required replace
		– Controller cannot analyse the values	Replace controller

WFR 2460 Service Tips -- Test Program (9)

T12: Update (Update programme).

Cannot be selected at present. If selected, the test programme can only be left by switching off the appliance.

T13: Valve 1 (Prerinse valve test programme).

Can be terminated by pressing the "Menu" button.

Sequence:

Time/Operation	Display	Note
Max. 30 min	D M P H V 1 2 3 N D U22 n253	The value of the analogue pressure sensor still increases when the valve has been switched off

Water volume measured in l (approx.) by flow rate sensor (points to U22)

Value of the analogue pressure sensor (points to n253)

T14: Valve 2 (Main rinse valve test programme).

Can be terminated by pressing the "Menu" button.

Sequence:

Time/Operation	Display	Note
Max. 30 min	D M P H V 1 2 3 N D n253	

Value of the analogue pressure sensor (points to n253)

T15: Val 1+2 (Fabric softener dispenser test programme).

Can be terminated by pressing the "Menu" button.

Sequence:

Time/Operation	Display	Note
Max. 30 min	D M P H V 1 2 3 N D n253	

T16: Val H (Hot-water valve test programme).

Programme duration 30 min., can be terminated by pressing the "Menu" button.

Sequence:

Time/Operation	Display	Note
Max. 30 min	D M P H V 1 2 3 N D n253	Applies only to hot-water models

T17: Pump (Pump test programme).

Programme duration 30 min., can be terminated by pressing the "Menu" button.

Sequence:

Time/Operation	Display	Note
Max. 30 min	D M P H V 1 2 3 N O n000	Applies only to hot-water models

Value of the analogue pressure sensor (points to n000)

HINT: To save time with Tests T13 - T17, press ***Menu*** to stop test when the washer stops filling (tests T13 - T16) or draining (T17). Run Test 17 to drain washer if needed.

HINT: Tests T13 - T16 fill until **n256** pressure switch reading appears. When display reads **n256**, press ***Menu*** to stop test.

WFR 2460 Service Tips -- Test Program (10)

T18: Heater (Heater and NTC test programme).
Programme duration 30 min., can be terminated by pressing the "Menu" button.
Sequence:

Time/Operation	**Display**	**Note**
Dependent on level	D M P H V 1 2 3 N H **t20**	
	D M P H V 1 2 3 N H **t22** Water temperature in °C	During the heating process the value in the lower half of the display in-creases to max. t 86

Error displays:

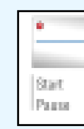
Display	**Error**	**Cause**	**Remedial action**
ERROR 05	NTC inter-ruption	Cable break / NTC damaged	Rectify cable break / replace NTC
ERROR 06	NTC short-circuit	Cable short-circuit / NTC damaged	Rectify cable short-circuit / replace NTC
ERROR 07	Unexpected heating	Temperature rise without actuation of heater	Check heater for short-circuit to earth
ERROR 08	Heating time exceeded	Not heating correctly	Check heating circuit, if re-quired replace line or heater

T19: Noise (Works programme).
Not relevant to customer service.

HINT: To save time with Test T18, press ***Menu*** to stop testing after the temperature has gone up several degrees, confirming the washer is heating OK.

NOTE: On Test T18, the water level rises until $\mathbf{N_H}$, which is the heating water level.

HINT: ***Start/Pause*** button light:



- Flashes **red** when tests can be selected or scrolled through.
- Stays **red** continually when tests are running.
- Stays **yellow** continually when drum is accelerating/running at max. speed (during drum motor test) or has reached $\mathbf{N_D}$ water level (~ **n152** pressure switch reading -- when water is draining, **yellow** light turns **red** ~ **n094** pressure switch reading).
- Flashes **yellow** when drum is slowing down from 1200 RPM max. speed during drum motor test.

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WFL 2060 & WFR 2460 Service Tips --

Troubleshooting of Minor Faults (Customer Self-Help)

Troubleshooting of Minor Faults

⚠ RISK OF ELECTRIC SHOCK! ⚠

Repairs must only be carried out by our Customer Service or an authorized technician.

If repairs are necessary, and you cannot eliminate the fault yourself with the aid of the following table:

- ❑ Turn the program selector to **Off**.
- ❑ Disconnect the washing machine from the mains.
- ❑ Turn off the water tap.
- ❑ Call Customer Service .

Fault	Possible cause	Action
The loading door cannot be opened.	"No final spin" selected.	Select **Drain** or **Spin**.
	Child lock activated.	Deactivate child lock.
	Power failure.	An interrupted program will be resumed when power returns. If the laundry is to be removed during a power failure, proceed as described under "Emergency lock release"
	Program is running and/or the door is locked for reasons of safety.	Wait until the program ends
	Plug is loose or not inserted.	Eliminate the cause.
	Program selector turned to **Off** before end of program.	Select a program.
Door cannot be opened, even though the appliance has been switched off and on again.	Child lock activated.	Deactivate child lock,
Door cannot be opened, even though the appliance has been switched off and on again.	For reasons of safety the door has been locked because the water level, temperature or speed is too high.	See "Topping up the laundry/Interrupting the program"
Program continues running, even though the appliance has been switched off and on again.	Child lock activated.	Deactivate child lock.
Appliance cannot be operated. "Child lock activated" is indicated in the display field.	Child lock activated.	Deactivate child lock

Fault	Possible cause	Action
Control lights do not shines.	A fuse has triggered.	Switch on/replace the fuse.
		Call Customer Service if this fault is repeated.
	Power failure.	An interrupted program will be resumed when power returns. If the laundry is to be removed during a power failure, proceed as described under "Emergency lock release" .
	Appliance is in energy-saving mode. This is not a fault.	Press the **Select** button; energy-saving mode is terminated.
Program does not start. **Start/Pause** indicator light flashes.	**Start/Pause** button not pressed.	Press the **Start/Pause** button.
Program does not start. "Door open?" indicated in the display field.	Loading door not closed properly.	Check whether laundry is trapped in door.
		Close the loading door (a click should be heard). Program continues.
"Press start" is indicated in the display field.	End time selected but still not activated by pressing the **Start/Pause**" button.	Press the **Start/Pause** button.
Program does not start. "Time delay" is indicated in the display field.	End time selected and activated.	None. Appliance starts automatically.
Clock cannot be set.	Program has already started; when a program has started, the clock cannot be set.	Wait until program ends.
"Set clock:" text remains in the display field even though the **Menu** button has been pressed.	The setting has switched from hours to minutes; both selection points have the same text.	None.
"– –:– –" is displayed instead of the end time in the display field.	Clock not set.	Set clock
End time cannot be selected.	Clock not set.	Set clock
	Program has already started; when a program has started, the end time can no longer be selected.	Reselect program; Before starting the program, select and start the desired end time .

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WFL 2060 & WFR 2460 Service Tips --

Troubleshooting of Minor Faults (Customer Self-Help)

Fault	Possible cause	Action
Spin speed cannot be selected.	Spinning is already in progress; during spinning the speed cannot be changed.	Select speed before spinning.
	Program selector is set to **Drain**; spinning is not possible with this program.	If required, select another program.
Child lock cannot be selected.	The program has already started.	Child lock can be selected in pause mode.
Detergent residue in the detergent dispenser.	Detergent was damp or lumpy.	Clean and dry the detergent dispenser
		Use the dispensing aid for liquid detergents.
Water does not enter the machine or detergent is not washed away. "Water tap closed?" indicated in the display field.	Water tap not turned on.	Turn on water tap. Program continues.
	Supply hose kinked or trapped.	Eliminate the cause.
	Strainers in supply hose clogged.	Clean the filter
	Water pressure too low.	Eliminate the cause.
Water cannot be seen in drum.	This is not a fault. The water lies below the visible part of the drum.	
Washing solution is not completely drained. "Pump blocked?" indicated in the display field.	Loose debris is blocking the pump.	Clean the pump
	The water drainage pipe and/or drain hose is blocked.	Clean the water drainage pipe and/or drain hose.
Water is flowing out from underneath the machine.	The thread of the supply hose is not tight.	Tighten the thread.
	Leak in the drain hose.	Replace the drain hose.
Foam coming out of the detergent dispenser.	Too much detergent.	Mix 1 tablespoon of fabric softener with ½ litre/1 pt of water and pour into chamber **II** of the detergent dispenser.
		Reduce the amount of detergent next time.
Repeated spinning.	This is not a fault. The imbalance compensation system is attempting to balance the load through repeated spins.	Always load large **and** small items together into the drum.
The laundry was not spun.	Large items of clothing became entangled and could not be distributed evenly in the drum. For reasons of safety the high-speed spin cycle was automatically suppressed.	Always load large **and** small items together into the drum.

Fault	Possible cause	Action
Program duration extended.	This is not a fault. The foam detection feature has activated an additional rinsing cycle to reduce the amount of foam.	Add a more appropriate amount of detergent next time.
	This is not a fault. The imbalance compensation system is attempting to balance the load through repeated spins.	Always load large **and** small items together into the drum.
Unsatisfactory washing result.	The degree of soil was higher than estimated.	Select suitable program or **Power Wash** as an additional option.
	Not enough detergent.	Add detergent according to the manufacturer's specifications.
Detergent residue on the laundry.	Some phosphate-free detergents contain water-insoluble residues that may appear as light spots on the laundry.	Brush off spots when laundry is dry.
Grey residues on the laundry.	Dirt accumulation from ointments, fats or oils.	Add the maximum amount of detergent and select the highest permissible temperature next time.

Fault displays

Text in display field	Possible cause	Action
"Water tap closed?"	Water tap not turned on.	Turn on water tap. Program continues.
	Supply hose kinked or trapped.	Eliminate the cause.
	Strainer in supply hose clogged.	Clean the filter
	Water pressure too low.	Eliminate the cause.
"Pump blocked?"	Loose debris is blocking the pump.	Clean the pump
	The water drainage pipe and/or drain hose is blocked.	Clean the water drainage pipe and/or drain hose.
"Door open?"	Loading door not closed properly.	Check whether laundry is trapped in door. Close the loading door.

If the fault cannot be eliminated with the aid of the above table: switch the appliance off, wait 5 seconds, switch the appliance on again, select and start the program.

If the fault recurs, call customer service

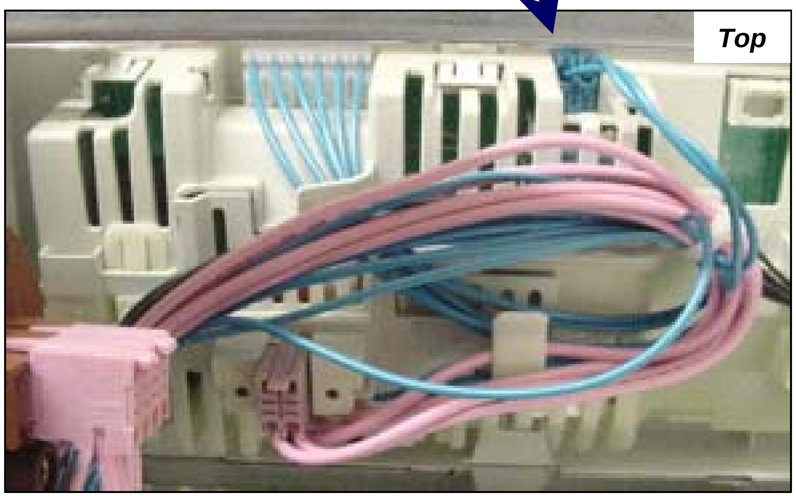
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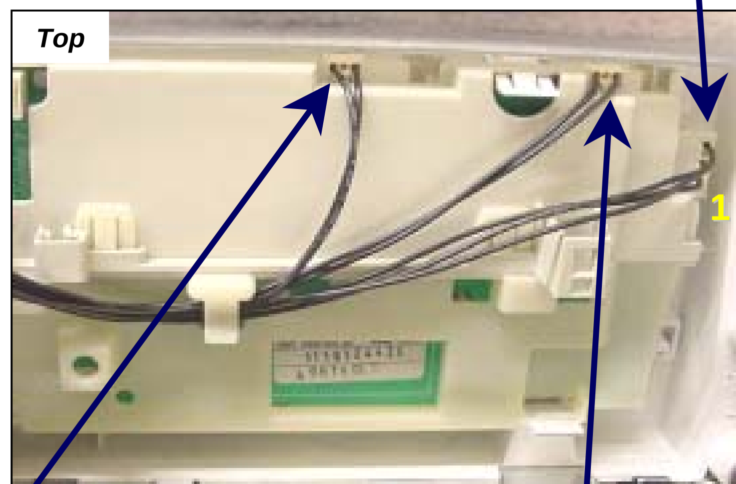
WFL 2060 Service Tips -- Resistance Measurements from Control Module (1)

Disconnect & measure **blue 2-pin** connector (with **blue** wires) to measure drain pump. Pump should read ~ 80 - 94 Ω

Disconnect & measure **white 5-pin** connector (with **3 black** wires) to measure dual cold water valve. Valve should read (pin 1 is at bottom):

- Main wash (pins 1-3): 2.7 - 4.5 kΩ
- Prewash (pins 1-5): 2.7 - 4.5 kΩ





Disconnect & measure **tan 3-pin** connector (with **2 black** wires) to measure NTC. NTC should read:

- 20ºC (68ºF): 5.4 - 6.5 kΩ
- 30ºC (86ºF): 3.5 - 4.3 kΩ
- 40ºC (104ºF): 2.3 - 2.9 kΩ

Disconnect & measure **tan 3-pin** connector (with **2 black** wires) to measure hot water valve. Valve should read 2.7 - 4.5 kΩ.

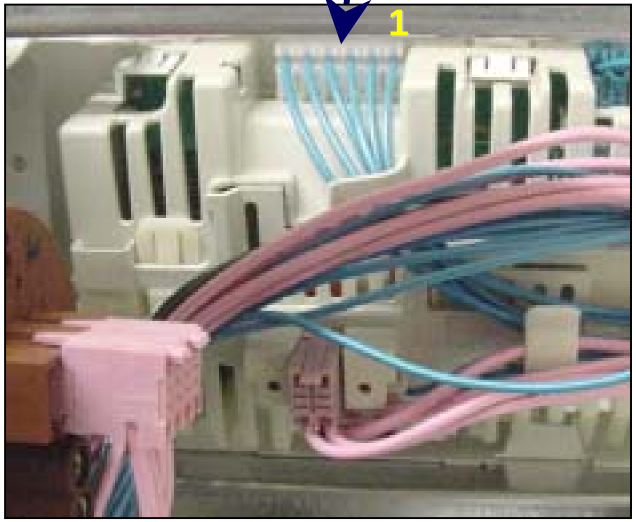
WARNING! Unplug washer before making any resistance measurements.

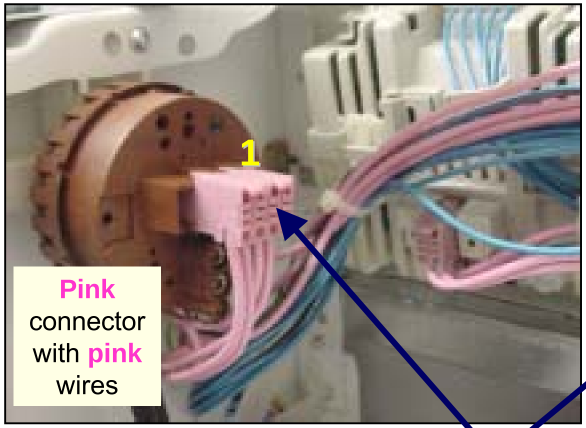
WFL 2060 Service Tips -- Resistance Measurements from Control Module (2)

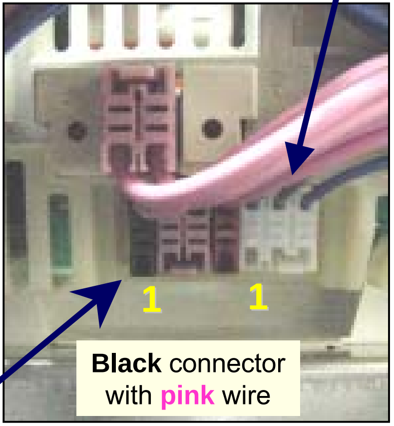
Disconnect & measure **white 6-pin** connector (with **blue** wires) to measure drum drive motor. Motor should read (pin 1 is at far right):

- Pins 1-2: 14 - 35 Ω
- Pins 3-4: 1.5 - 10 Ω
- Pins 5-6: 0.7 - 2.1 Ω

Disconnect & measure **white 3-pin** connector (with **blue** wires) to measure door latch motor. Measure between pins 1-2 (pin 1 at far left). Motor should read ~ 500 - 1500 Ω.







Disconnect & measure 2 connectors to measure heater. Measure between pin 1 (far left connector in group of 7 pins) and pin 2 (2nd pin from right) of pressure switch connector. Heater should read 23.2 - 29.4 Ω.

WARNING! Unplug washer before making any resistance measurements.

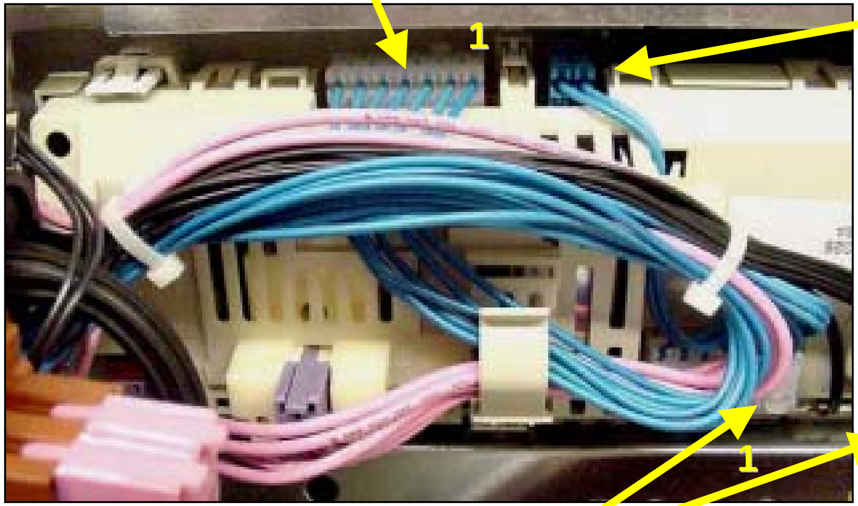
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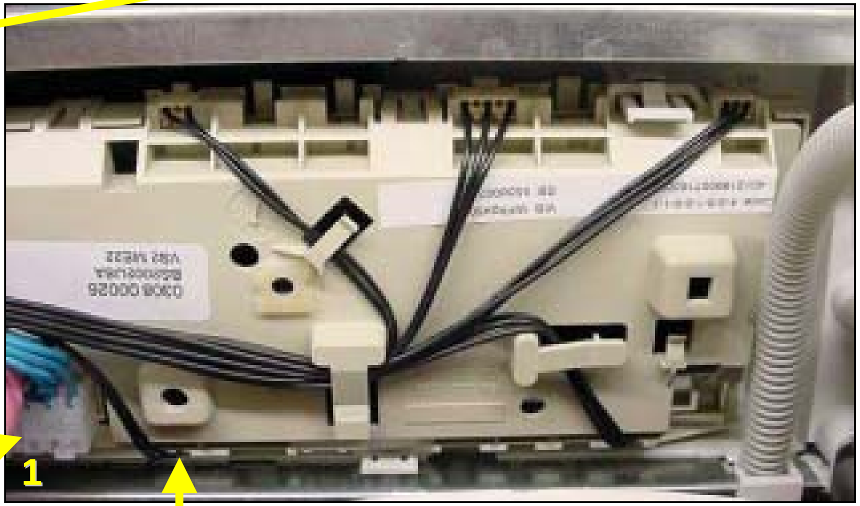
WFR 2460 Service Tips -- Resistance Measurements from Control Module (1)

Disconnect & measure **white 6-pin** connector (with **blue** wires) to measure drum drive motor. Motor should read (pin 1 is at far right):

- Pins 1-2: 14 - 35 Ω
- Pins 3-4: 1.5 - 10 Ω
- Pins 5-6: 0.7 - 2.1 Ω

Disconnect & measure **blue 2-pin** connector (with **blue** wires) to measure drain pump. Pump should read ~ 80 - 94 Ω.





Disconnect & measure **white 3-pin** connector (with **blue** wires) to measure door latch motor. Measure between pins 1-2 (pin 1 at far left). Motor should read ~ 211 - 259 Ω.

Disconnect & measure **white 2-pin** connector (with **black** wires) to measure NTC. NTC should read:

- 20ºC (68ºF): 5.4 - 6.5 kΩ
- 30ºC (86ºF): 3.5 - 4.3 kΩ
- 40ºC (104ºF): 2.3 - 2.9 kΩ

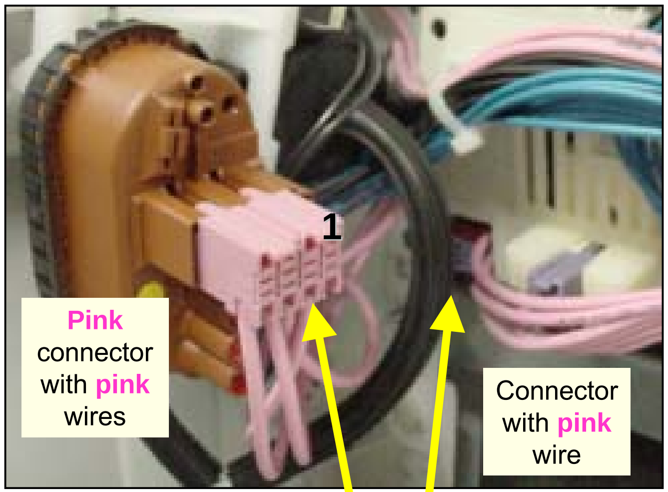
WARNING! Unplug washer before making any resistance measurements.

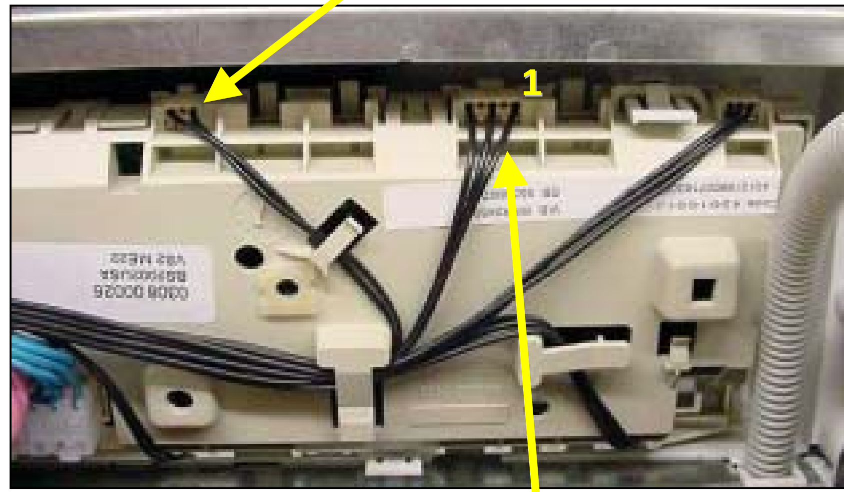
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WFR 2460 Service Tips -- Resistance Measurements from Control Module (2)

HINT If necessary to access connectors, carefully pry control module tabs and remove module from fascia panel.

Disconnect & measure **white 2-pin** connector (with **black** wires) to measure hot water valve. Valve should read 2.7 - 4.5 kΩ.





Disconnect & measure 2 connectors to measure heater. Measure between pin 1 (1-pin connector at bottom of group of 3 connectors at left of module) and pin 2 (2nd pin from right) of pressure switch connector. Heater should read 23.2 - 29.4 Ω..

Disconnect & measure **white 5-pin** connector (with **3 black** wires) to measure dual cold water valve. Valve should read (pin 1 is at right):

- Main wash (pins 1-3): 2.7 - 4.5 kΩ
- Prewash (pins 1-5): 2.7 - 4.5 kΩ

WARNING! Unplug washer before making any resistance measurements.

WFL 2060 & WFR 2460 Service Tips -

- Troubleshooting (1)

Symptom	Problem	Solution
Washer won't start.	❑ Electricity is disconnected or has been turned off. ❑ Cycle selector knob or control module has failed.	❑ Make sure washer is connected to an appropriate 240V, 60 Hz circuit (according to local codes). Turn on electricity. ❑ Control module has onboard cycle selector knob. Check voltage output to water inlet valves and drum motor (when they're energized). If no voltage, replace faulty control module.
Washer won't fill.	❑ Water supply turned off. ❑ Water inlet hose filters (strainers) blocked. ❑ Water pressure too low. ❑ Control module has failed. ❑ Water inlet valve(s) has failed.	❑ Turn on water supply. ❑ Check water inlet hose filters. Clean if dirty. Replace filters if damaged. ❑ Check incoming water pressure. ❑ Check voltage output to water inlet valves (when they're energized). If no voltage, replace faulty control module. ❑ Measure resistance of water inlet valves (~ 2.7 – 4.5 kΩ). Replace inlet valve(s), if faulty.
Washer won't drain.	❑ Drain pump or motor protector has failed. ❑ Control module has failed.	❑ Disconnect drain pump and measure resistance at connector (~ 80 – 94 Ω). Replace drain pump if faulty. ❑ Check voltage output to drain pump when it's energized). If no voltage, replace faulty control module.

<u>WARNING</u>! Unplug washer before starting any repairs.

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WFL 2060 & WFR 2460 Service Tips -- Troubleshooting (2)

Symptom	*Problem*	*Solution*
Drum won't rotate.	❑ Drum rear bearing has failed.	❑ Check how drum rotates. If drum wobbles or won't move, replace faulty rear bearing.
	❑ Motor drive circuit (Triac) has failed.	❑ Check voltage at motor connectors when motor is energized. If low or no voltage, replace faulty control module.
	❑ Drum drive motor has failed.	❑ Check voltage at motor connectors when motor is energized. If ~ 240V, replace faulty drum motor.
	❑ Reversing relays have failed.	❑ Check voltage at motor connectors when motor is energized. If voltage doesn't reverse, replace faulty control module.
Washer won't heat.	❑ Heater has failed.	❑ Disconnect heater and measure resistance at terminals (~ 23.2 – 29.4Ω). Replace heater if faulty.
	❑ NTC has failed.	❑ Disconnect NTC and measure resistance at terminals (~ 5.4 – 6.5 k Ω @ 20ºC (68ºF)). Replace NTC if faulty.
	❑ Heater is covered with scale.	❑ If possible, remove & clean heater. If not, replace it.
	❑ Voltage too low.	❑ Have an electrician check the house wiring and the wiring to the washer to make sure it is 240 volts.
	❑ Control module has failed.	❑ Check voltage output to drain pump when it's energized). If no voltage, replace faulty control module.

WARNING! Unplug washer before starting any repairs.

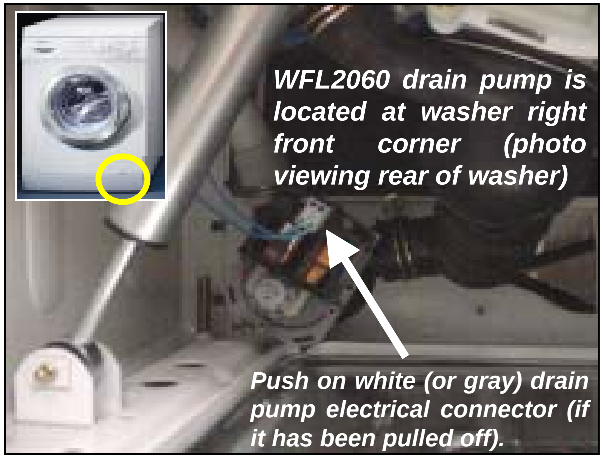
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WFL 2060 & WFR 2460 Service Tips -- Troubleshooting (3)

Symptom	*Problem*	*Solution*
Washer overheats.	❑ Control module has failed. ❑ NTC failed.	❑ Check voltage to heater. If voltage is present when heater shouldn't be on, replace faulty control module. ❑ Disconnect NTC and measure resistance at terminals (~ 5.4 – 6.5 kΩ @ 20ºC (68ºF)). Replace NTC if faulty.
Door won't lock.	❑ Door isn't closed properly. ❑ Door latch is broken. ❑ Door lock has failed.	❑ Close door securely. If door won't latch, check door latch and door hinge alignment. ❑ Replace broken door latch. ❑ Measure resistance of door lock mechanism (~ 500 – 1500 Ω for WFL 2060 or 211 – 259 Ω for WFR 2460). Replace faulty door lock mechanism.
Washer won't spin over 800 RPM (WFR 2460).	❑ Replacement control module wasn't configured when installed.	❑ Use test **T5** on test program (pp. 43, 61) to configure control module to U.S. settings (**42010011**).
Washer has wrong wash cycles and hot water inlet doesn't work (WFL 2060).	❑ Replacement control module wasn't configured when installed.	❑ Use instructions on page 42 to set dipswitches on control module (p.c. board) to U.S. settings.

WARNING! Unplug washer before starting any repairs.

WFL 2060 Service Tips -- WFL 2060 Not Running



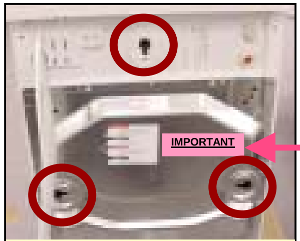
***NOTE*: Occasionally, WFL2060 washers have been set up for sales demonstration and not reconfigured for normal use when they were sold.**

***HINT*: When repairing WFL2060 washers that won't run at all, *check the drain motor first to see if its connected*.**

***NOTE*: WFL2060 washers *cannot* be set up for sales demonstration mode since the control senses the drain motor during start up.**

***HINT*: If WFL2060 washers have been set up for sales demonstration and not reconfigured for normal use, all lights will turn on and washers won't run. *If this occurs, check the drain motor first*.**

***HINT*: If electrical tape has been used on the washer, carefully clean off all tape adhesive residue to insure good electrical connections.**

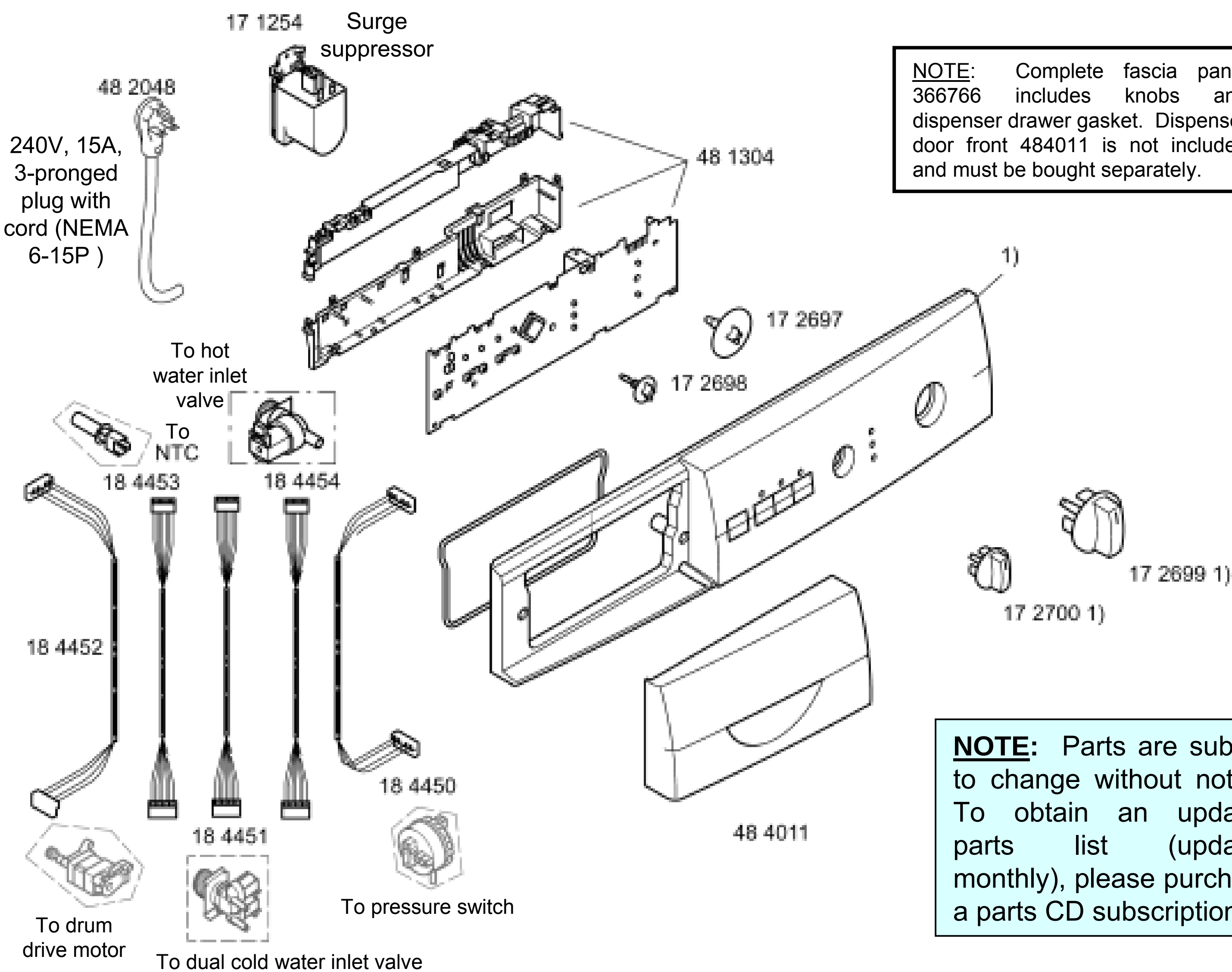


Shipping bolt locations

***HINT*: When repairing WFL2060 washers that won't run at all, if the drain motor has been disconnected for sales display, please check the following:**

- ***Make sure the drain motor is reconnected.***
- ***Make sure the fuscia label has been removed from the rear of the the washer.***
- ***Make sure the shipping bolts have been removed.***

WFL 2060 Service Tips -- Fascia Panel Parts



NOTE: Complete fascia panel 366766 includes knobs and dispenser drawer gasket. Dispenser door front 484011 is not included and must be bought separately.

NOTE: Parts are subject to change without notice. To obtain an updated parts list (updated monthly), please purchase a parts CD subscription.

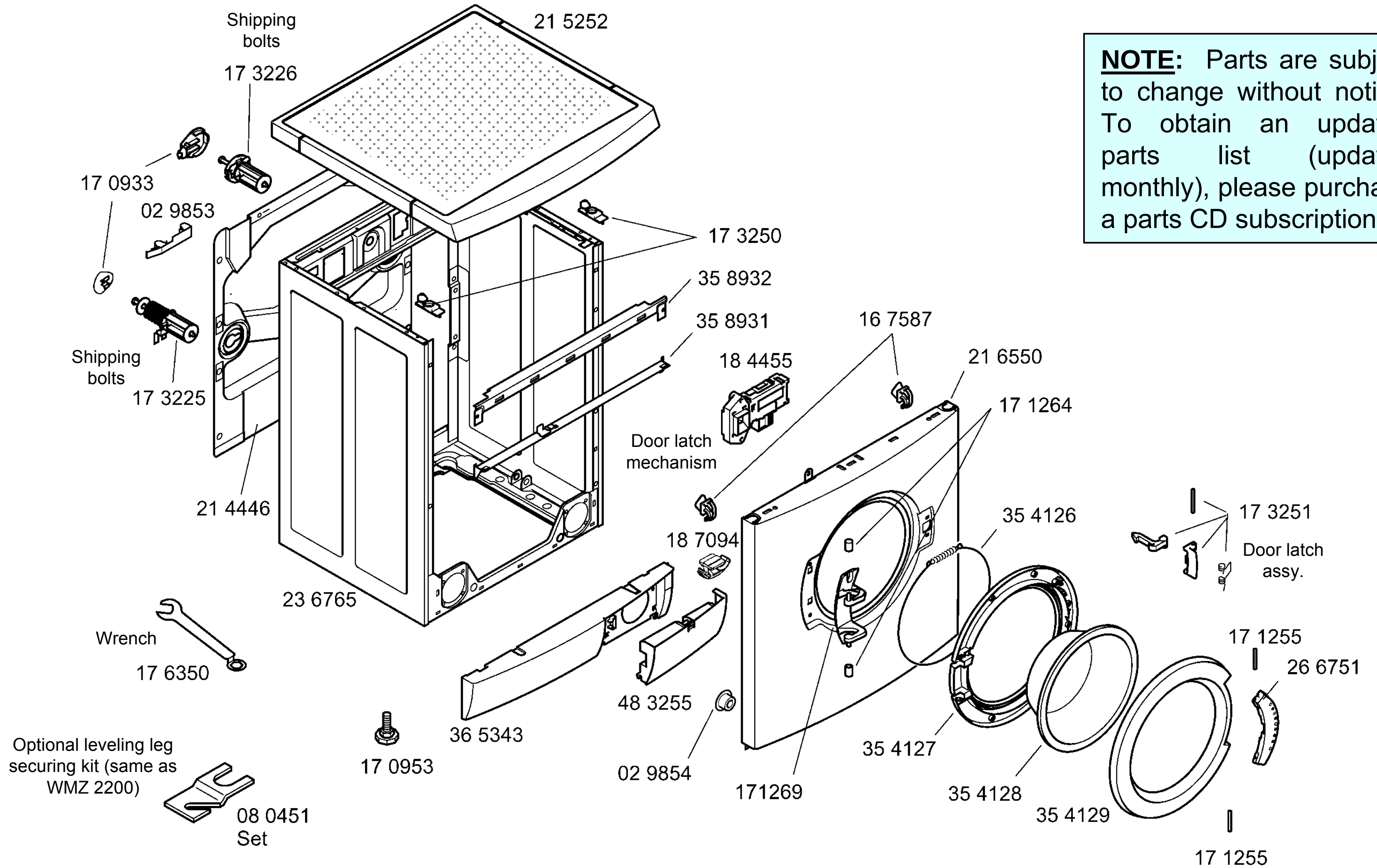
Use & Care Manual
52 9445
(en)

Cycle Chart
52 9456
(en)

1) 36 6766
(en)

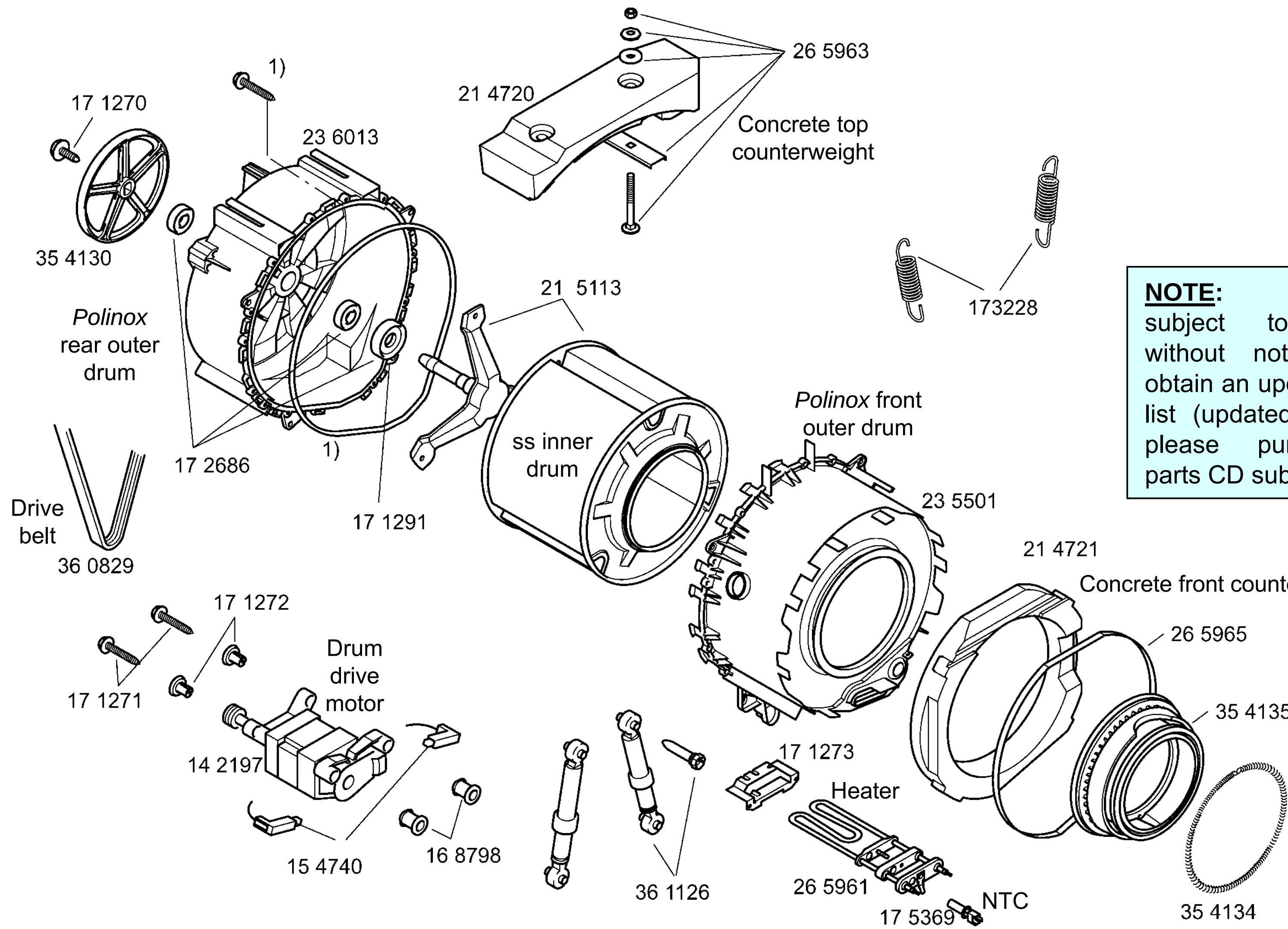
WFL 2060 Service Tips -- Frame & Door Parts

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BOSCH

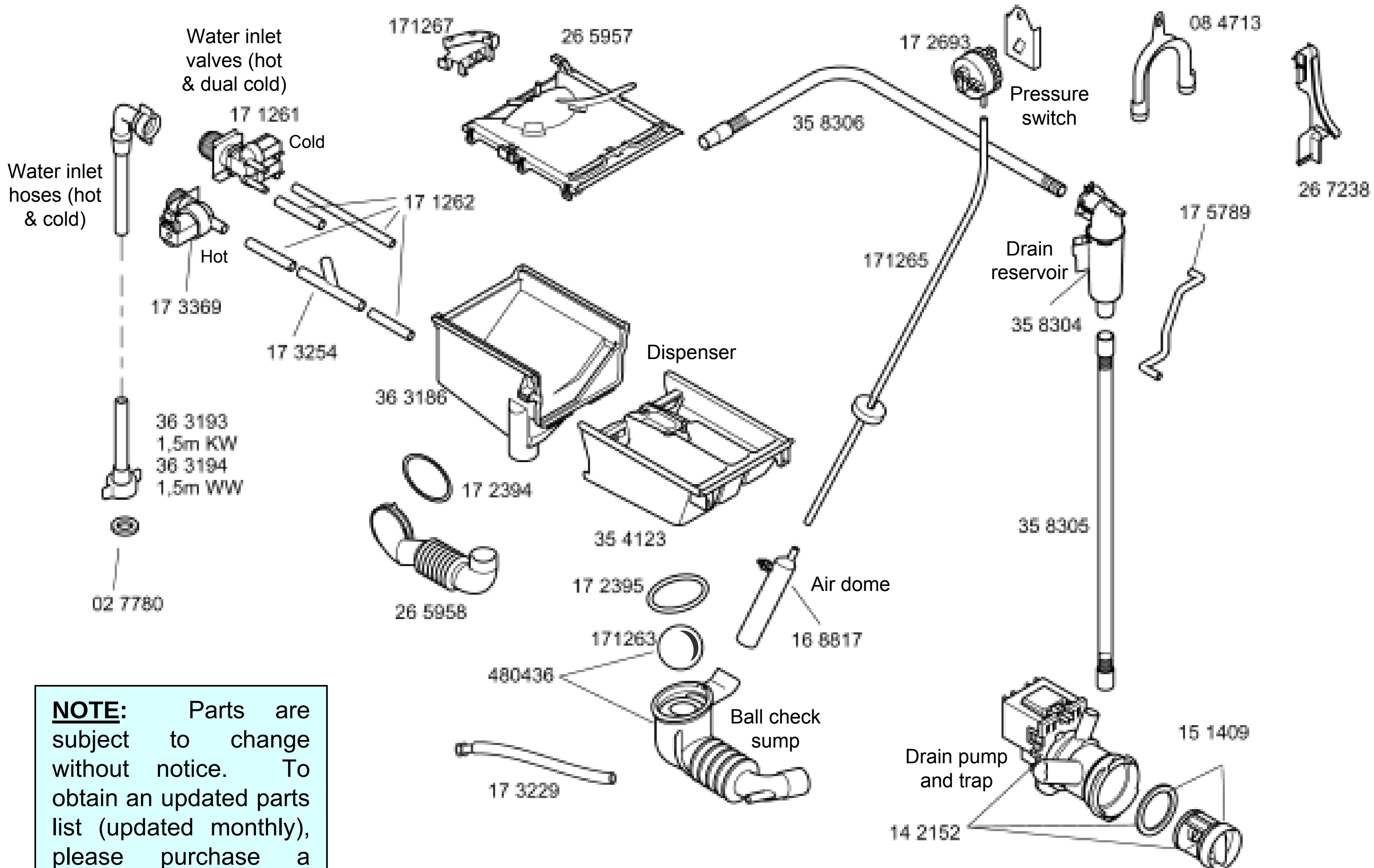
WFL 2060 Service Tips -- Drum Parts



NOTE: Parts are subject to change without notice. To obtain an updated parts list (updated monthly), please purchase a parts CD subscription.

BOSCH

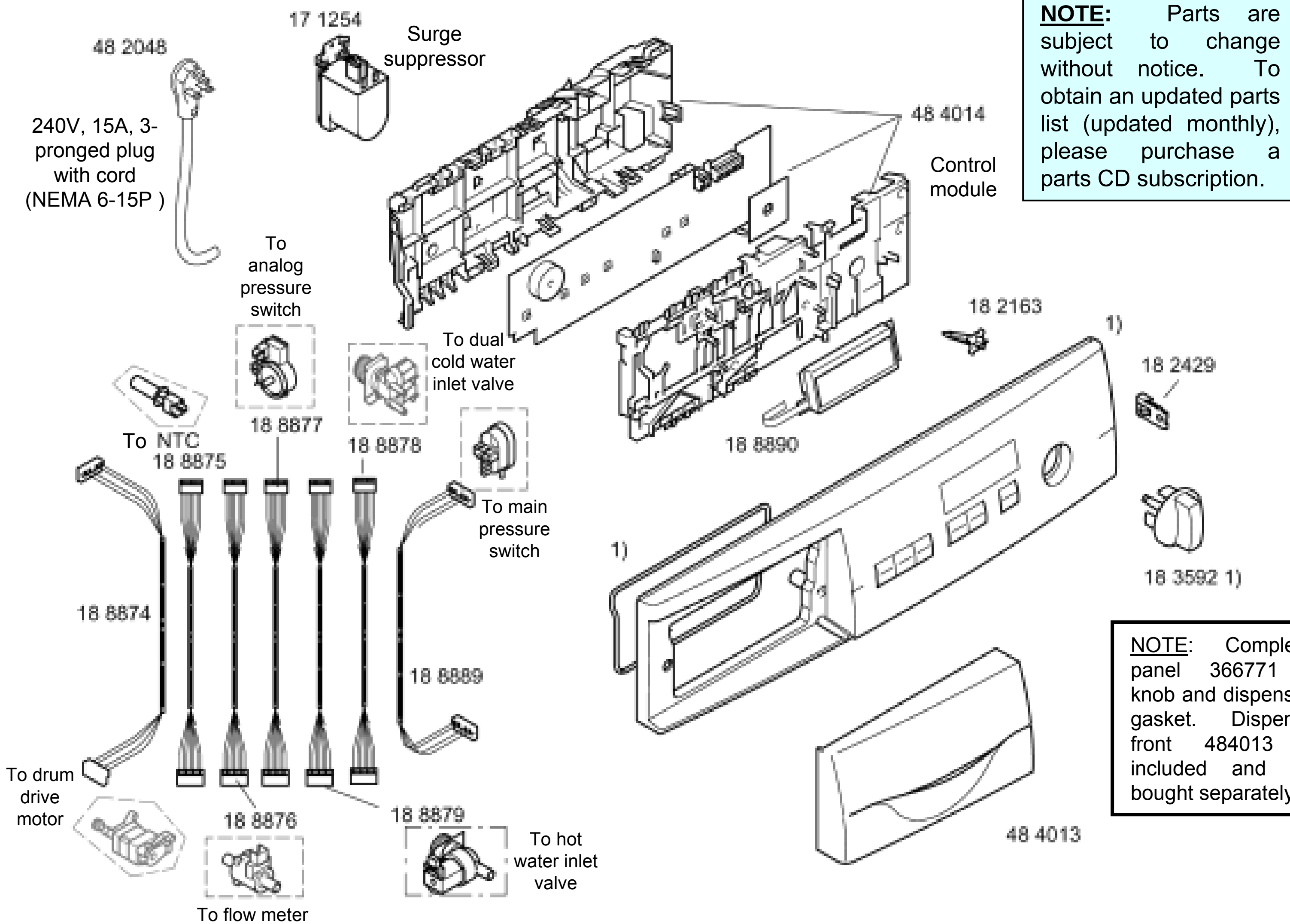
WFL 2060 Service Tips -- Pump Parts



NOTE: Parts are subject to change without notice. To obtain an updated parts list (updated monthly), please purchase a parts CD subscription.

BOSCH

WFR 2460 Service Tips -- Fascia Panel Parts



NOTE: Parts are subject to change without notice. To obtain an updated parts list (updated monthly), please purchase a parts CD subscription.

Use & Care Manual
(en)
58 1168

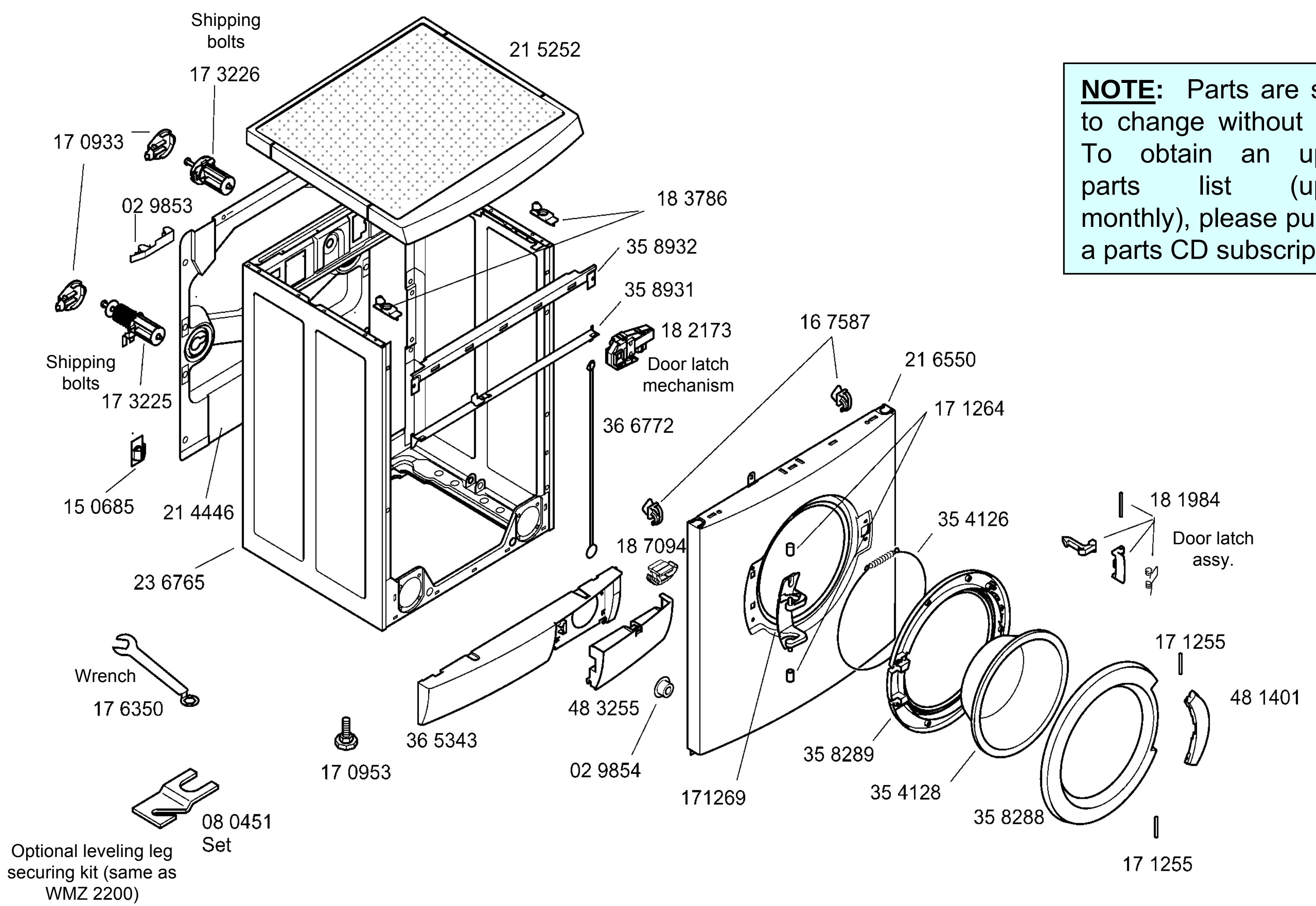
Cycle Chart
581169
(en)

1) 366771
(en)

NOTE: Complete fascia panel 366771 includes knob and dispenser drawer gasket. Dispenser door front 484013 is not included and must be bought separately.

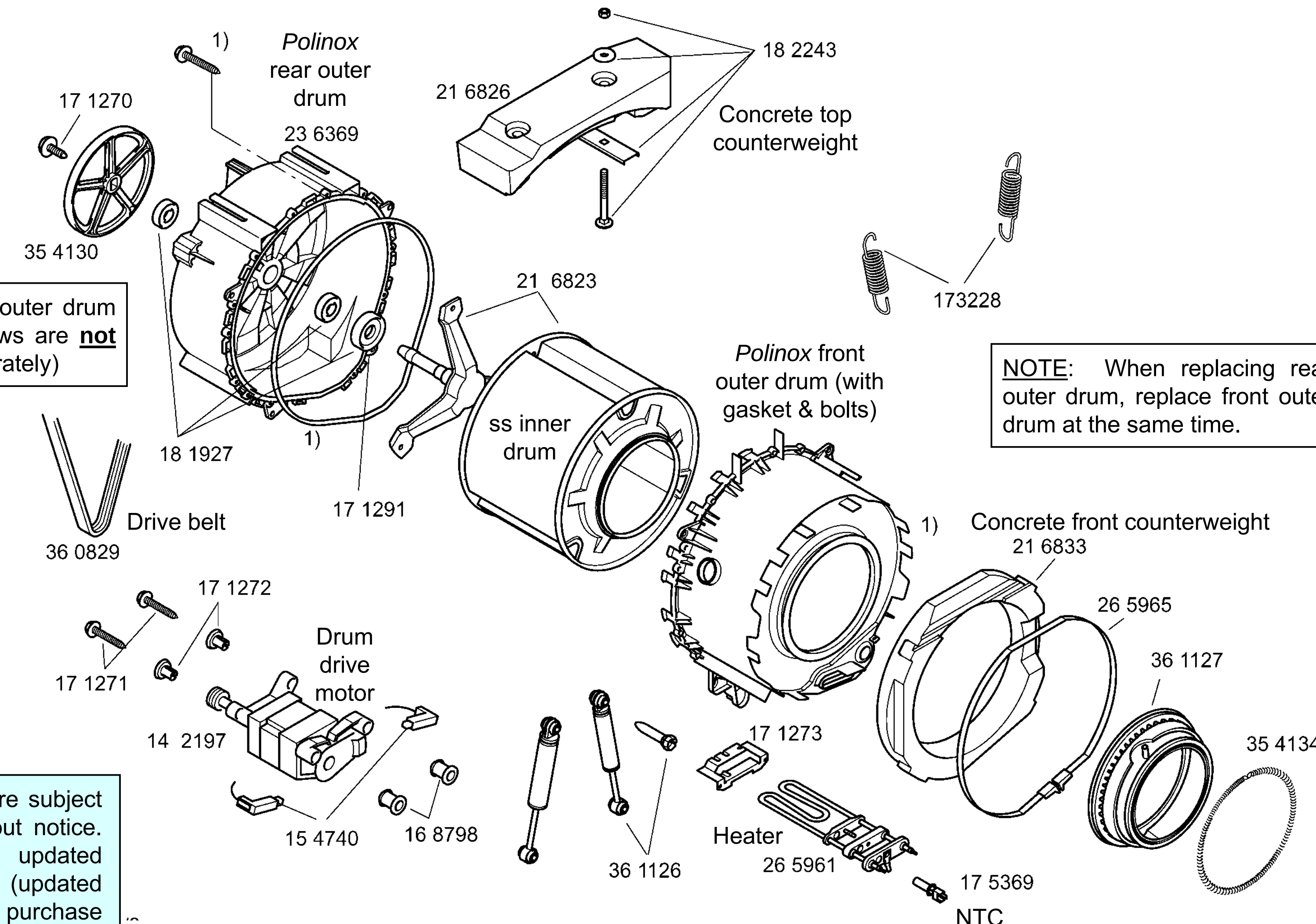
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WFR 2460 Service Tips -- Frame & Door Parts



NOTE: Parts are subject to change without notice. To obtain an updated parts list (updated monthly), please purchase a parts CD subscription.

WFR 2460 Service Tips -- Drum Parts



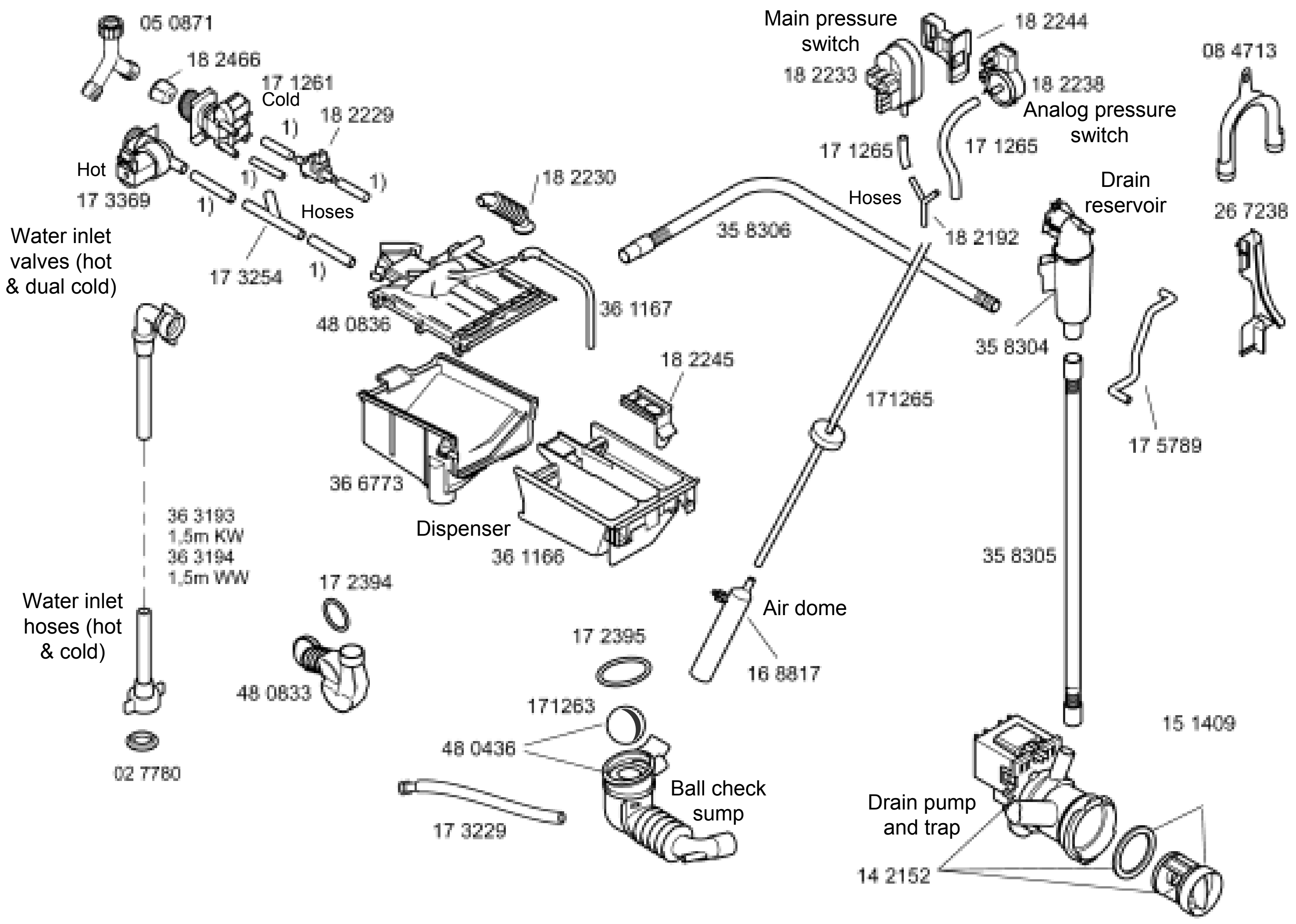
NOTE: Rear outer drum gasket & screws are **not** available separately)

NOTE: When replacing rear outer drum, replace front outer drum at the same time.

NOTE: Parts are subject to change without notice. To obtain an updated parts list (updated monthly), please purchase a parts CD subscription.

BOSCH

WFR 2460 Service Tips -- Pump Parts



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